

The Light Microscopist's Diatom Glossary

by

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Preface to 2nd Edition

The previous Edition of this publication contained a number of formatting errors for which I apologise. Most, if not all, of these have been corrected in this edition. It has been determined that two new term categories should be introduced – Hydrological terms and Oceanographic terms - as references to both these disciplines are frequently found in publications and also associated with samples. There is also a growing tendency in papers to include words or terms under the banner of Ecology. These terms have been included where it is felt appropriate. Some readers have also pointed out that the plethora of older texts in languages other than English cause some problems to those of us who are monolingual. Thus, a section relating to German and French terms is to be included in later editions, but will not be as extensive as the current English Glossary.

It has become increasingly clear that whilst many of the the relatively older terms have fallen into disuse they were used more or less consistently throughout texts of their time. The same, however, cannot be said for more modern terms where usage and interpretation are sometimes at significant variance one with another. This being the case I have included the disparate descriptions where such seems appropriate.

Modern academic papers relating to the Diatomaceae use less of the older terms but have introduced other 'vogue' terms, equally confusing to those outside academia or not steeped in a specific discipline. Many of these are now included in this edition, though some of the explanations of their meaning are complex and need further effort to simplify. Many of these modern papers use the Harvard Method of referencing in the body of the text which may make the bulk of the paper hard to read and interrupts the flow, but if you can discipline yourself to ignore the references everything becomes easier to follow. Don't be put off by verbose titles. With the wealth of published material now available the title has become an important mechanism for academics to quickly identify what will lie within their sphere of interest. Thus the title will likely contrive to include as many key words as possible relating to the subject under investigation.

Also appended to this edition is a categorised listing of the all the terms.

What may be surprising to some is the sheer quantity of literature pertaining to diatoms that is now published. The evidence of such a plethora of papers confirms the importance of the diatoms and often, despite their numbers, their fragility and how easily we might tip the balance of nature with unforeseen, and perhaps catastrophic, results.

Introduction

The intention of this glossary is to provide a reference that will enable readers of both old and new tracts to understand the terms used. In my experience each publication has a tendency to provide information relating to its own references and methods, and anyone using a number of publications at any one time has the utmost difficulty in determining the references, having to flick back and forth in multiple volumes and then having to consult the plates to confirm the meaning.

Having stated this aim, it was also my intention to provide as comprehensive a coverage as possible. To this end I have expended considerable effort to locate examples and derivations. However, were I to continue to do this in an effort to complete all entries, then, the publication would never see the light of day. It is therefore my intention to continue with the work and publish an extended version as and when the volume of new or amended entries dictates.

The glossary contains those references that I, and colleagues, have encountered. No doubt, this is not all terms that have been utilised in the many hundreds of published works.

Where appropriate the word or term has associated with it a published example of its use.

All the entries used to describe frustule or valve features have an F in braces {F} following the word or term.

All the entries used as geometric descriptions have a G in braces {G} following the word or term.

All the entries used to describe a habitat, an era, or a mode of living have an H in braces {H} following the word or term.

All the entries used to describe a microscopic technique or view have an M in braces {M} following the word or term.

All the entries used to describe a process or state, chemical or physical, have a P in braces {P} following the word or term.

All the entries used as a Hydrological term have Hy in braces {Hy} following the word or term.

All the entries used as an Oceanographical term have an O in braces {O} following the word or term.

All the entries that might be used in an Ecological context have an E in braces {E} following the word or term.

Many of the Geometric terms are combined in descriptions e.g. lanceolate-elliptic. As there are far too many of these combinations to enumerate the reader should refer to the constituent parts separately and remember that the description implies something between the two, with the former term being predominant. In the example above then, the shape would be more lanceolate than elliptic whereas ellipito-lanceolate would be more elliptic than lanceolate.

Many descriptive items can and have been prefixed by 'sub'. This implies a tendency towards a particular feature without actually being sufficiently like it to warrant the actual term. These 'sub...' words and terms have been omitted as full entries. However, the following are some that have been encountered:- Subacute,

Subapiculate, Subcapitate, Subcircular, Subconical, Subcordate, Subcruciform, Subcuneate, Subcylindrical, Subdistant, Subelliptical, Subglobose, Sublanceolate, Sublinear, Submarginal, Submedian, Subnavicular, Suborbicular, Suboval, Subparallel, Subquadrangular, Subradiate, Subrhombohedral, Subrostrate, Subsessil rings, Subspherical, Subsymmetrical, Subtriangular, Subtruncate. These entries in original publications may be hyphenated e.g. sub-triangular.

The entry structure is as follows:-

Word or term {Category of use}

Origin of the word or term. (Etymology)

An explanation of the word or term in the context of its category and where possible in relation to the diatoms.

Example:

Publication name

(Species if present)

An extract from the publication containing the word or term with the term underlined.

A word or two about derivatives of words describing structures or features. In general one may consider a word that is constructed of a feature name with 'ate' appended e.g. Papilla - Papillate, to mean that the feature being described is in nature similar or likened to a papilla though not the same. The same word with 'ose' appended e.g. Papilla - Papillose to mean that it contains Papilla. Though this is not always true and sometimes the terms are interchangeable one should always consider the context in which the word is used.

Notes:- The term 'Cell' is usually given to a living diatom individual. The term 'Frustule' is a complete skeleton, composed of valves and connecting bands.

A

Abbreviate {F}

In combination. Latin. Ad – to, Latin. brevis - short.

Contracted or shortened.

Example:

Diatoms from the West Indian Archipelago by P.T. Cleve.
(Navicula regula)

Striae coarse, radiate, reaching to the median line,
abbreviate in the middle...

Ablation {Hy}{E}

The process by which ice and snow dissipate owing to melting and evaporation.

Example:

Diatoms of the McMurdo ice shelf, Antarctica... (Davida E. Kellogg & Thomas B. Kellogg) [1986]

These observations may pertain to other present and former antarctic ice shelves that are characterized by surface ablation and basal freezing.

Absorption {Hy}{O}{E}

Latin. absorbere - to suck in.

The process by which substances in gaseous, liquid, or solid form are assimilated or taken up by other substances. Also the utilisation of light energy sources.

Example:

Spectral photosynthesis, quantum yield and bluegreen light enhancement of productivity rates in the diatom *Chaetoceros gracile* and the prymnesiophyte *Emiliana huxleyi* (Oscar Schofield et al) [1990]

While the absorption spectra for the chromophytes were similar, *E. huxleyi* exhibited a higher quantum efficiency and hence a higher photosynthetic rate, than *C. gracile*.

Abutment {P}

The proximity of one feature to another, as in adjacent to.

Example:

The Cytoplasmic Fine Structure of the Diatom, *Nitzschia palea* (R. W. Drum) [1963]

Each chloroplast extends from the points of mutual abutment in the center of the cell, to within 2 or 3 microns of the respective end of the cell.

Abutment {Hy}

The part of a valley or canyon wall against which a dam is constructed. Right and left abutments are those on respective sides of an observer looking downstream.

Example:

Algal communities near Cape Maclear, southern Lake Malawi, Africa (K.A. Haberyan) [1991]

...long filaments of a reddish-black form of *Oscillatoria*, which seemed confined to rock abutments...

Abutment Seepage {Hy}

Reservoir water that moves through seams or pores in the natural abutment material and exits as seepage.

Example:

Abyssal {H}

Greek. abyssos - bottomless

(1) Pertaining to the zone of modal ocean basin depth, below 2000 m, lying seaward to and deeper than the bathyal (qv) zone.

(2) Encompassing the ocean floor at depths between 2 and 6 km.

Example:

Diatoms in the Ocean Deeps (E. J. F. Wood) [1956]

There is a great deal to support the theory enunciated in this paper that the diatoms found in abyssal mud samples

Abyssal Fan {O}

Greek. abyssos - bottomless and

Fan shaped accumulation of sediment from rivers that is deposited at the base of a submarine canyon within an ocean basin.

Example:

The New Zealand Geochemical Group Newsletter [Nov. 2004]
A geochemical and mineralogical study to determine the sources of sediment to the Bounty Submarine Fan (Chris Kautz)

Consisting of interbedded contourites and turbidites, the abyssal fan contains sediments deposited from the Early Miocene (~16 Ma) to present.

Abyssal Plain {O}{E}

Greek. abyssos – bottomless and

Another name for ocean floor (beyond the continental shelf).

Example:

Distribution of Siliceous Microfossils in Surficial Bottom Sediments of the Gulf of Mexico (J.P. Jendrzewski) [1978]

In the Abyssal Plain region, diatoms, silicoflagellates...

Abyssobenthic {H}

In combination. Greek. abyssos - bottomless, benthos - depth.

A subdivision of the oceanic benthic environment at depths between 2 and 6 km.

Example:

Encyclopaedia Britannica

The corresponding zones of bottom-dwelling, or benthic, organisms are the archibenthic (800-1,100 metres, or about 2,600-3,600 feet) and abyssobenthic (below 1,100 metres) zones.

Abyssopelagic {H}

In combination. Greek. abyssos - bottomless, pelagos - sea.

A subdivision of the oceanic pelagic environment occupying the strata between 2 and 6 km.

Example:

DEEP-SEA BIOLOGY (Paul H. Yancey) [2011]

The Bathypelagic and Abyssopelagic ("midnight zones"), which are even deeper...

Accessory Pigment {P}

Pigment capable of capturing radiant energy and transferring it to chlorophyll-a.

Example:

...fucoxanthin, A brown or tan accessory pigment found in many species of brown algae and some species of diatoms.

Achnanthiform {F}{G}

In combination. Greek. achne - froth or down, anthos - a flower

Shaped like an Achnanthes.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.

(Rhoicosigma genus)

Frustules more or less torsive, achnanthiform.

Acicular, Aciculate {G}{F}

Latin. acicula - diminutive of acus - a needle.

Being needle-shaped.

Example:

New Species of Fossil or Pelagic Marine Diatoms by J. Brun. Trans. J. W. Barker.

(*Biddulphia calamus*)

...and all the upper region is covered with fine acicular spines.

Acidobiontic {P}{H}

Having a pH below 5.5.

Example:

The inwash of catchment diatoms as a source of error in the sediment-based reconstruction of pH in an acid lake (R. W. Batterbee et al) [1984]

This interpretation is supported by the data for diatom accumulation rates which indicate no decrease in the accumulation rates of the acidobiontic taxa over this period.

Acidophilic {P}{H}

In combination. Latin. acidus - sour, Greek. philos - friend

Having a pH value above 5.5 and below 7.

Example:

The inwash of catchment diatoms as a source of error in the sediment-based reconstruction of pH in an acid lake (R. W. Batterbee et al) [1984]

The predominance of acidophilous taxa over acidobiontic taxa in the more acid blanket...

Acre-foot {Hy}{E}

A volume of water equal to 1 foot in depth and covering 1 acre; equivalent to 43,560 cubic feet or 325,851 gallons. The standard measure of agricultural irrigation.

Example:

Millsite Reservoir, Utah

It has a 2000 acre-foot conservation pool, which guarantees...

Actic (Actad) {H}

Greek.

Pertaining to littoral rocky shores.

Example:

Ac(c)uminate {F}{G}

Latin. acuminis - a point.

Tapered or sharpened.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.

(*Navicula minor*)

Form rectangular in the middle, accuminate at the ends, which are acute.

Acute {G}{F}

Latin. acutus - to sharpen.

A junction (usually an apex) whose internal angle is less than ninety degrees

Example:

On New Forms of Marine Diatomaceae by W. Gregory.

(Navicula minor)

Form rectangular in the middle, acuminate at the ends, which are acute.

Adherent {P}

In combination. Latin. ad - to, haerere - to stick.

Sticking. As in attached to something, sometimes another individual.

Example:

Synopsis of the British Diatomaceae by W. Smith. (Amphorae genus)

It is probable that most of the Amphorae are at first adherent, but they are usually found detached...

Adjoin(ed)(ing) {P}{F}

Latin. adjacio - to lie at or near.

Being in contact with each other.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.

(Melosira arenaria)

...fitting perfectly with those of the adjoining disc.

Adnate {P}

In combination. Latin ad - to, gnatus - born.

Closely applied to; growing on; attached along entire length.

Example:

The Diatomaceae of Philadelphia and Vicinity

by C.S. Boyer. (Terpsinoe genus)

Frustules quadrangular, adnate in filaments,...

Addressed, Ap(p)ressed {F}

In combination. Latin. ad - to, pressum - to press.

Closely pressed together but not united.

Example:

Marine Diatoms of the Philippine Islands by A. Mann

(Navicula plicatula)

I have found...straight or undulating rhaps and

...bluntly oval or appressed apices.

Adsorption {Hy}

In combination. Latin. ad - to, sorbere - suck in.

The adherence of gas molecules, ions, or molecules in solution to the surface of solids.

Example:

Interaction between zinc and freshwater and marine diatom species (A. GELABERT et al) [2006]

Although Zn adsorption constants on carboxylate groups are almost the same, Zn surface adsorption capacities are very different among diatom species...

Aerate {Hy}

Latin. aer – air.

To supply air to water, soil, or other media.

Example:

...economical way to aerate or oxygenate pond water is through algal photosynthesis.

Aereolae (pl.), Aereola (sing.) {F}

Latin. areola - a small open space.

The name given to the regular perforations seen in the valve or girdle. Usually hexagonal or polygonal. See Also Alveolae. [Also spelt – Aerolae (pl.), Aerola (sing.), Areolae (pl.), Areola (sing.)].

The modern definition is - a perforation in the valve with an internal or external sieve membrane (normally spelt Areolae)

Example:

The Algae - A review by G. W. Prescott.

The wall in densely ornamented with aereolae.

Aereolate {F}

Latin. areola - a small open space.

Valve surface marked with Aereolae.

Example: See Areolate

Aerobe {P}

Greek. aer - air.

An organism which can live and grow in an environment containing oxygen.

Example:

Freshwater Algae - Their Microscopic World Explored by H. Canter-Lund & J.W.G. Lund.

Aerobic {P}{Hy}

Greek. aer - air.

Pertaining to an organism which can live and grow in an environment containing oxygen - an aerobe.

Example:

Freshwater Algae - Their Microscopic World Explored by H. Canter-Lund & J.W.G. Lund.

Aerolae (pl.), Aerola (sing.) {F}

Latin. areola - a small open space.

See Areolae.

Aerophytic {P}

In combination. Latin. aer - air, Greek. philos - friend

Tendency to colonise sub-aerial or terrestrial habitats, often associated with condition of high humidity.

Example:

Aerophytic diatoms from caves in central Moravia (Aloisie Pouliřková & Petr Hařler) [2007]

A total of 22 diatom species was identified, mostly aerophytic species and tolerant of lowlight intensities.

Afterbay {Hy}

The tail race of a hydroelectric power plant at the outlet of the turbines. The term may be applied to a short stretch of stream or conduit, or to a pond or reservoir.

Example:

Aquatic Plant Control Research (P. A. Pryfbgle) [1997]
The Drum Canal had a problem with excessive growth of the diatom *Didymosphenia geminata*. This species had previously been identified in the Bear River and in the canal system below the Drum Powerhouse afterbay. Initial sightings, characterized this growth as a dense, off-white mat accumulating on the afterbay discharge screens.

Agamic {P}

In combination. Greek. a - no, gamos - marriage.

Asexual.

Example:

Notes on Diatoms by F.B. Taylor
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Agglomeration {P}

In combination. Latin. a - to, glomus - ball.

Loosely arranged mass of cells, usually colonies with no definite shape or arrangement. (also in Hydrography - Agglomerate - An ice cover of floe formed by the freezing together of various forms of ice.)

See also Amorphous.

Example:

Diatomaceous Earth

The ore is then classified and sent to a large rotary kiln, where it is calcined (heated) to agglomerate the diatoms and produce the desired grade.

Aggradation {E}

a downward accumulation of stream-carried inorganic matter. Often has the effect of making the bed of a stream or flood plain rise.

Example:

Aggregation {F}{P}

Latin. aggregatum - to bring together.

A grouping together.

Often referring to the density of features on the valve, but also to an assemblage of individual frustules.

Example:

British Diatomaceae by Arthur Scott Donkin.

(Naviculeae)

...so as to form striae, which are either granular or costate, according to the aggregation or segregation of the nodules.

Agium (Agad) {H}

Greek.

Pertaining to a beach community.

Example:

Akinete {P}

In combination. Greek. a - without, kinesis - movement.

Name given to a thick-walled spore that can resist harsh conditions.

Functions as an asexual resting stage. (Cyanobacteria only)

Example:

An analysis of cyanobacterial akinetes in the sediments shows that there has been a major increase in the density

Aktological {H}

Pertaining to shallow inshore environments and communities.

Example:

Ala(e), Aloe {F}

Latin. ala - a wing.

A wing. An extension to the valve that forms a flange. See Wing.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.

(*Surirella fastuosa*)

Girdle face cuneate, with rounded margins showing robust alae, approximate to the connecting zone.

Alate {F}

Latin. ala - a wing.

Winged. See Alae. See Wing.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.

(*Pyxilla*)

...showing in the centre a simple or alate apiculus.

Algae {O}

Latin. alga - seaweed.

Marine and freshwater plants (including most seaweeds) that are single-celled, colonial, or multi-celled, with chlorophyll but no true roots, stems or leaves and with no flowers or seeds

Example:

Diatoms are unicellular algae generally placed in the family Bacillariophyceae.

Algal bloom {Hy}

The rapid proliferation of passively floating, simple plant life, such as blue-green algae, in and on a body of water.

Example:

A Note on the Algal Bloom at Kawerua Coast, North Island, New Zealand (Pranjit Sarma) [1975]

An algal bloom caused by two species of Centric diatoms is recorded from the coastal waters off Kawerua, North Island of New Zealand.

Alkalibiontic {P}{H}

Having a pH above 8.5.

Example:

The palaeolimnology of Soppensee (Central Switzerland), as

evidenced by diatom, pollen, and fossil-pigment analyses (A. F. Lotter) [2001]

The fossil diatom assemblages are dominated by planktonic alkaliphilous to alkalibiontic species with mainly meso- to eutrophic preferences...

Alkaline {Hy}{E}

Has a pH greater than 7; in common usage, a pH of water greater than 7.4. See also Basic.

Example:

Diatoms in Alkaline, Saline Lakes: Ecology and Geochemical Implications (R. E. Hecky) [1973]

Six diatoms achieve dominance in 26 alkaline, saline lakes in East Africa. There is a pronounced tendency for these species to replace each other.

Alkaliphilic, Alkalophilic, Alkaliphilous {P}{H}

Having a pH above 7 and below 8.5.

Example:

Diatom Assemblages from Pleistocene Interglacial Beds at Toronto (H. C. Duthie) [1967]

In all three samples the alkaliphilic diatoms in the previous samples are missing or are present in low numbers...

Allometry {P}{}

In combination. Greek. allos – other, metron – measure.

The study of the relative growth of a part of an organism or population in relation to the growth of the whole.

Example:

Species Size and Distribution Jointly and Differentially Determine Diatom Densities in U.S. Streams (S. I. Passy) [2008]

Negative biovolume-distribution relationships imply that the nature of diatom distributions is allometric.

Therefore, smaller species are...

Alluvial {Hy}

In combination. Latin. ad - to, luere - to wash.

An adjective referring to alluvium (see Alluvium).

Example:

Holocene palaeoecology and formation of the Shoalhaven River deltaic-estuarine plains, southeast Australia (M. Umitsu) [2001]

...and diatoms from the top of one drillhole record the transition from brackish conditions to freshwater alluvial sedimentation.

Alluvion {P}

In combination. Latin. ad - to, luere - to wash.

Matter carried in suspension and deposited by rivers or floods.

Example:

Notes on Diatoms by F.B. Taylor

123 - ...may be found buried under the alluvion far from the sea.

Alluvium {Hy}{E}

In combination. Latin. ad - to, luere - to wash.

Sediments deposited by erosional processes, usually by streams.

Example:

Past Earthquake-Induced Rapid Subsidence along the

Northern San Andreas Fault (K. L. Knudsen) [2002]

Poorly preserved diatoms within the silty matrix of

alluvium represent a mixture of in situ estuarine and

allochthonous fresh to brackish species.

Alpha {F}

Greek.

The greek letter - used to distinguish like forms, possibly even forms that are transitory. See also Beta.

Example:

On Some New Species of Fresh-water Diatomaceae by W. Gregory. (*Navicula lacustris*)

Alveolae (pl.), Alveoli (pl.), Alveola (sing.) {F}

Latin. alveolus. a little trough or tray. Also alveus - a hollow, an excavation, a cavity

Round, rounded or polygonal areas in the valve wall. Quite often appearing as in a honeycomb. Also Alveoli. Alveolus, the modern name given to the chamber that runs from an opening on the surface (as Alveola) to an axis of the valve.

Example:

The Morphology of the Diatom Frustule by H.G. Barber & E.Y. Haworth (*Cyclotella*)

Valve face with outer zone of striae (alveoli) and central area unmarked...

Alveolate {F}

Latin. alveolus. a little trough or tray. Also alveus - a hollow, an excavation, a cavity.

Valve surface marked with Alveolae.

Example:

The Morphology of the Diatom Frustule by H.G. Barber & E.Y. Haworth (*Cyclotella*)

...central area unmarked or irregularly punctate, occasionally alveolate.

Alveoles {F}

Latin. alveolus. a little trough or tray. Also alveus - a hollow, an excavation, a cavity.

See Alveolae.

Example:

A Treatise on the Diatomaceae by Henri van Heurck. (*Coscinodiscus radiatus*)

Valve with alveoles arranged in radiating rows...

Amalgamate {F}

Greek. malagma - an emollient.

Mixed. Combined.

Example:

Notes on Diatoms by F.B. Taylor

87 - ...formed by the confluence or amalgamation of a series of dots or striae.

Amorphous {H}{P}

Greek. amorphos - shapeless.

Lacking any regular or definable shape. (Shapeless)

Example:

Key to the Genera of Diatoms of the Inland Waterways of Temperate North America by W. C. Vinyard.

(Mastogloia)

Solitary or colonial in gelatinous tubes or amorphous masses.

Anabranch {Hy}{H}

A diverging branch of a river which re-enters the main stream.

Example:

Distribution of phytoplankton in the Three-Gorge Reservoir during rainy and dry seasons (H. Zeng) [2006]

Since the damming of the Yangtze River, eutrophication in the anabranch within the backwater...

Anaerobic {O}{E}

In combination. Greek. an - without, aer - air, bios - life.

Living or functioning in the absence of oxygen

Example:

A comparison of marine planktonic and sediment core diatoms in Hong Kong with emphasis on Pseudo-nitzschia (M. Dickman) [1997]

To determine whether potentially toxic diatoms had become more common during the last six decades, three gravity cores were taken from the anaerobic sediments of Kowloon Bay in Victoria Harbour.

Anastomose, Anastomosing {F}

In combination. Greek. ana - back, stoma - mouth.

To form a network by virtue of crossing.

Example:

Marine Diatoms of the Philippine Islands by A. Mann (Podocystis spathulata)

There is also in this species...a heavy network of anastomosing costal bars which does not in reality belong to the surface of the valve...

Anglewise {F}

Latin. angulus.

Having angles.

Example:

Report on the Irish Diatomaceae by E. O'Meara.

(Navicula williamsonii)

...compartments...anglewise in the middle...

Anguliferous {F}

Latin/Greek. angulus/ankylos - to bend.

Having distinct angles joined by straight lines an an outline e.g. Triceratium.

Example:

H.M.S. Challenger - Report on the Diatomaceae.

(Triceratium genus)

Soon after Ehrenberg established the genus Triceratium among the anguliferous Diatoms,...

Animated {P}

Latin. animatum - life.

Moving.

Example:

Key to the Genera of Diatoms of the Inland Waterways of Temperate North America by W. C. Vinyard.

(Nitzschia paradoxa)

Colonial, animated.

Anisogamous

In combination. Greek. anisos - unequal, gamos - marriage.

Example:

Diatoms of the British Coastal Waters by N. I. Hendey
p. 24

Anisotropy {Hy}{F}{E}

The condition of having different properties in different directions.

Example:

A Capillarity Mechanism for Diatom Gliding Locomotion (R. Gordon) [1970]

Any anisotropy in the silica shell might lead to bowing of the raphe,...

Annulus, Annular {F}

Latin. annulus - a ring.

A ring shaped structure. Also sometimes used to refer to Diaphragms or Septa.

Example:

Diatoms from the West Indian Archipelago

by P.T. Cleve.

(Pleurosigma attenuatum)

The two central septa form in the middle a rounded, quadrangular annulus.

Annulate {F}

Latin. annularis - diminutive of anus - a rounding or ring.

In a ring formation.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.

(Rhizosolenia)

...consisting of numerous joints with an annulate or imbricate arrangement;...

Annuliform {F}

Latin. annularis - diminutive of anus - a rounding or ring.

In a ring formation.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(Henseniella)
...showing numerous annuliform septa...

Anomalous {O}{F}

Not usual or regular; abnormal. Difficult to explain or classify.

Example:

Stauroneis terryi (T. C. Palmer) [1910]
The anomalous diatom here to be dealt with was first made known by Mr. William A. Terry, of Bristol, Conn., the veteran collector...

Anoxic {P}{0}

In combination. Greek. an - no, and oxygen

The absence of free diatomic oxygen, O₂.

Example:

Diatoms respire nitrate to survive dark and anoxic conditions (A. Kamp) [2011]
Diatoms survive in dark, anoxic sediment layers for months to decades.

Anoxic Sediments {H}

In combination. Greek. an-. Privative.oxygen. plus Latin. sedimentum - to sit.

Sediments preventing a sufficient supply of oxygen.

Example:

Diatoms respire nitrate to survive dark and anoxic conditions (A. Kamp) [2011]
Diatoms survive in dark, anoxic sediment layers for months to decades.

Antarctic {H}

In combination. Greek. anti - opposite, arktos - a bear

Zone of the Antarctic (Southern) Ocean and the continent of Antarctica, including the subantarctic and south Subtropical Convergence (qv); extending from the continental margin northward to about 40°S, the approximate limit of northward ice drift.

Example:

Diatoms as indicators of environmental change in Antarctic and subantarctic freshwaters (Sarah. A. Spaulding et al)
...and Antarctic diatom floras are remarkably regional,...

Anterior {F}

Latin. ante - before.

Normally used to mean away from the axis. Also means to the front.

Example:

Pritchard's Infusoria
(Meridion)
...have a middle opening, as well as two anteriorly.

Antero-posterior {F}

In combination. Latin. ante - before, posterus - coming after.

Median.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(Rhizosolenia robusta)
...hood consisting of annuli with antero-posterior
imbrication confused...

Aperture {F}

Latin. apertura - to open.

An opening or hole.

Example:

Pritchard's Infusoria
(Navicula viridis)

The lorica near the central opening being depressed, the aperture appears eccentric, in respect to the medial line. This reference, only seen in Pritchard, appears to refer to the raphe.

Apex, Apices {F}{G}

Latin. acutus - a tip.

In diatom terms an apex is generally taken to be a point on the margin through which the axis passes. However, some forms do not possess such an axis in which case an apex is the point at which a diatom contour turns through an acute angle producing a tip. An apex may also be a point at which a feature terminates. e.g. a raphe. Thus you can have four apices on a single raphe - two median apices and an apex at each end furthest from the central nodule.

Example:

(1) The Planktonic Diatoms of Northern Seas by M.V. Lebour.

(Rhizosolenia setigera)

Intercalary bands two long rows pointing towards the apex,...

(2) A Treatise on the Diatomaceae by Henri Van Heurck.
(Navicula Iridis)

Raphe with median apices curved...

Aphotic Zone (Aphytal) {H}{O}{E}

In combination. Greek. a- none, photos - light plus Greek. zone - a girdle

A depth of the ocean where light is absent, save for any produced by bioluminescent organisms.

Example:

The Biology of the Algae by F. E. Round.

...is greater than the respiratory loss when the cells are in the aphotic zone.

Apical {F}

Latin. apicis - a tip.

A feature that is attached to or close to an apex. See also explanation of Apex.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(Rhizosolenia setigera)

Apical process solid at the base...

Apical Axis {G}

Latin. apex - the tip or top of a thing, the point or summit. plus axis - an axle, a broad plank.

The longitudinal axis of a valve. The raphe or pseudoraphe (if present) will lie either within this axis or eccentric to it (to one side but broadly parallel) Essentially the axis linking the two poles of a valve.

Also known as Long Axis, Sagittal Axis.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(Chaetoceros genus)

Valve bearing at each end of the long axis (apical axis) on the corners,...

Apical Plane {G}

Latin. apex - the tip or top of a thing, the point or summit. plus planus - level flat.

The axial plane that is perpendicular to the transapical (across the apical axis) plane.

See also. Sagittal Plane.

Example:

Actinella comperei (Eunotiophycidae, Bacillariophyta): A New endemic freshwater diatom from Tasmania (Australia) (Koen Sabbe et al) [2000]

...valve symmetry (less asymmetric about the apical plane than A. mylaertii)...

Apical Pore Field {F}

Latin. apex - the tip or top of a thing, the point or summit. plus Greek. poros – a passage plus Old English. feld.

Group of porelli at one or both poles in freshwater cymbelloid and gomphonemoid diatoms, through which mucilaginous stalks are secreted.

See also explanation of Apex.

Example:

(1) A Preliminary Investigation of the Phylogenetic Relationships among the Freshwater, Apical Pore Field-Bearing Cymbelloid and Gomphonemoid Diatoms (J. P. Kociolek) [1988]

Relationships among the apical pore field-bearing diatom genera Brebissonia, Cymbella, Gomphonema, Gomphoneis, Didymosphenia, Gomphocymbella....

(2) Diatoms from the Colombian and Peruvian Amazon: the Genera Encyonema, Encyonopsis and Gomphonema (Amelia A. Vouilloud et al) [2009]

Raphe filiform sinuous, proximal ends expanded, smoothly curved to the dorsal side, distal fissures hooked to the ventral margin. Apical pore fields at both sides of the raphe fissure.

Apical Series {F}

Latin. apex - the tip or top of a thing

Plates at the apex of a cell, that may be surrounding an apical pore.

Example:

Marine Phytoplankton Atlas of Kuwait's Waters (Manal Al-Kandari et al) [2009]

Oblea rotunda...The apical series consist of three apical plates

Apical View {M}

Latin. apex - the tip or top of a thing, the point or summit. plus French. vue - to see.

The view when the transapical axis is parallel to the axis of the microscope.

Or in English the view obtained when looking at an apex head on.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(Chaetoceros mitra)

Terminal bristles diverging in transapical view, in apical view parallel and converging.

Apiculate {G}

Latin. apex - the tip or top of a thing, the point or summit.

Having a short sharp point on an otherwise blunt end.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
(Mastogloia apiculata)

Valves oval or lanceolate-elliptical, with apices apiculate, obtuse.

Apicules (Apiculi, Apiculus) {F}

Latin. apex - the tip or top of a thing, the point or summit.

Short, stout processes on the valve face itself.

Example:

Miocene and Pliocene Diatoms by W. W. Wornardt
(Actinoptychus senarius)

The raised sectors with short but stout processes (apicules) in the middle of the sector...

Apogamous {F}

In combination. Latin. apo - from, gamos - marriage.

The omission of the sexual process in the life-history.

Example:

A Treatise on the British Freshwater Algae
by G.S. West & F.E. Fritsch.

(Pennatae)

The auxospores are formed by conjugation or apogamously.

Apophysis (sing.), Apophyses (pl.) {F}

In combination. Greek. apo - off, phyein - to grow.

An outgrowth or protuberance.

Example:

Sibirsk Diatoms by Otto N. Witt
(Actinoptychus delicatissimus)

The shield is circular and breaks up into ten undulating plates bending towards each other of which five are always furnished with a dotted marginal apophysis on the edge.

From these apophyses delicate but sharp lines extend...

Appendiculate {P}

In combination. Latin. ad - to, pendere - to hang.

Though this sounds as if it should be a description of a feature it is a word sometimes

used to denote a form that has been 'tagged on to' a species as a variety.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(*Coscinodiscus radiatus* v. *Jonesianus*)

This is only an appendiculate form of the preceding variety.

Apposition, Apposed {P}

Latin. appositus - to put.

See Exogenous. See Endogenous.

Example:

The Plant Cell by William A. Jensen.

The earliest layers are stretched during the enlargement phase of cell growth, yet, because more layers are added, wall thickness remains the same or increases. This process is known as growth by apposition.

Appressed {F}

In combination. Latin. a - to, pressum - to press.

Pressed close to the cell membrane. See also Adpressed.

Example:

Diatoms from the South China Seas
by Dickman, Hodgkiss, Cheng & Gao.
(Glossary Entry)

Approximate {F}

In combination. Latin. ad - to, proximus - nearest.

In the context of Diatom study this is likely to mean close together. It may also be used to signify parallel to.

Example:

Diatoms from the West Indian Archipelago by P.T. Cleve.
(*Navicula virginea*)

Apices produced. Median pores approximate.

Aperture {F}

Latin. aperire - to open.

An opening or hole.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(*Chaetoceros* genus)

...the cells are formed into chains, usually with large or small apertures or foramina between the cells.

Aquaculture {Hy}{O}{E}

In combination. Latin. aqua - water, cultura - to till (grow).

The science of farming organisms that live in water, such as fish, shellfish, and algae.

Cultivation of aquatic organisms under controlled conditions

Example:

Growth Characteristics and Antioxidant Properties of the Benthic Diatom *Navicula incerta* (BACILLARIOPHYCEAE) FROM JEJU ISLAND, KOREA (A. Affan) [2007]

Benthic diatoms are a commonly used food source in shellfish aquaculture.

Aquatic {Hy}

Latin. aquaticus – of water.

Living or growing in or on water.

Example:

Freshwater diatom communities of the Stromness Bay area, South Georgia (B. van de Vijver) [1996]

The purpose of this study was to investigate the aquatic diatom communities of Stromness Bay area.

Aquiclude(Aquaclude) {Hy}{E}

Latin. aqua - water

A formation which contains water but cannot transmit it rapidly enough to furnish a significant supply to a well or spring.

Example:

Aquifer (Aquafer) {Hy}{E}

Latin. aqua - water

Permeable layers of underground rock, or sand that hold or transmit groundwater below the water table that will yield water to a well in sufficient quantities to produce water for beneficial use.

Example:

Diatoms as indicators of wetland salinity in the Upper South East of South Australia (K. H. Taffs) [2001]

...fluctuating upper groundwater aquifer and alkaline soils which have destroyed most microfossils. It was found that the diatom assemblage was preserved in...

Aquitard (Aquatard){Hy}

A confining bed that retards but does not prevent the flow of water to or from an adjacent aquifer; a leaky confining bed. It does not readily yield water to wells or springs, but may serve as a storage unit for ground water (AGI, 1980). See preferred term confining unit.

Example:

Groundwater abstraction in the Zumpango-Pachuca region, central Mexico. (G. Hernandez-Garcia) [2003]

...and clays), as well as organic matter and shell microfossils (ostracod and diatom). Such deposits are the upper aquitard that covers...

Araphanid {F}

In combination. 'a' meaning without (same meaning as 'i' in illegitimate – without legitimacy) Greek. rhaphe - a seam-like junction, a ridge.

No raphe on either valve.

Example:

Diatoms from the South China Seas by Dickman, Hodgkiss, Cheng & Gao.

...It is classified here as an araphinid pennate genus because...

Araphid {F}

In combination. 'a' meaning without (same meaning as 'i' in illegitimate - without

legitimacy) Greek. *rhaphe* - a seam-like junction, a ridge.

No raphe on either valve.

Example:

Diatoms from the South China Seas
by Dickman, Hodgkiss, Cheng & Gao.
(Glossary Entry)

Labiata process - An opening into the valve that terminates in a flattened tube with a longitudinal slit. It may also extend outwards from the valve as a tube. The hyaline rays or slits in the valve of *Asteromphalus* each have a labiate process at the end of the valve slit near the valve margin. Labiate processes are present in some centric and some araphid pennate diatoms. The labiate process may be a precursor to the modern raphe.

Arc {F}

Latin. arcus - a bow.

A part of the circumference of a circle.

Example:

New Species of Fossil or Pelagic Marine Diatoms
by J. Brun. Trans. J. W. Barker.
(*Actinoptychus flos-marina*)

...curved in an arc and with a medial tubuliform cleft.

Arched {F}

Latin. arcus - bow.

The valve mantle forming an arch. Sometimes applied to a smaller feature.

Example:

Simbirsk Diatoms by Otto N. Witt
(*Trinacria coronata*)

The shield is strongly arched and recalls...

Archibenthic {H}

In combination. Greek. archi - before, *benthos* - deep

Pertaining to the benthic environment and benthos of the continental slope between 65 and 1050m; the upper part of the abyssal zone.

Example:

Zonation of Deep Biota on Continental Margins (R. N. Gibson) [2005]

...the line between the archibenthic and abyssal somewhat arbitrarily at 1000 m.

Archipelago {O}{E}

An archipelagos or island group is a chain or cluster of islands that are formed tectonically.

Example:

Freshwater Diatoms from Ile de la Possession (Bart Van de Vijver et al) [2002]

The island is part of the Crozet Archipelago, situated in the southern Indian Ocean. A total of 220 diatom taxa, belonging to 44 genera have ...

Arctic Ocean {H}

Greek. arctos - a bear, plus French. oceanne.

Smallest and shallowest (mean depth = 1,205 m) of the world's five main ocean basins. Area = 14,090,000 km². The shallowness is related to the extreme width of the surrounding continental shelves, up to 1,700 km wide. Covered by floating pack ice, up to 3 to 4 m thick, over much of its surface.

Example:

Distribution patterns of diatom surface sediment assemblages in the Laptev Sea (H. Cremer) [1999]
The modern diatom distribution in the Laptev Sea, Arctic Ocean, was investigated in 89 surface sediment samples.

Arcuate {G}

Latin. arcus - anything arched or bowed.

Arched or bow-shaped.

Example:

Synopsis of the British Diatomaceae by W. Smith.
(*Epithemia sorex*)
...slightly recurved at the extremities, dorsal line highly arcuate;...

Arenicolous {H}

Latin. arena - sand, colo - inhabit.

Living in sand; psammic.

Example:

Areolae (pl.), Areola (sing.), Areoles {F}

Latin. areola - a small open space.

See Aereolae.

Example:

Diatoms of British Coastal Plankton by J. B. Sykes.
...cell covered with fine but conspicuous areolae and sometimes...

Areolate {F}

Latin. areola - a small open space.

Bearing Areolae or likened to areola.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(*Endictya* genus)
Valves circular, reticulate, or areolate, with raised denticulate margins.

Areolation {F}

Latin. areola - a small open space.

Bearing Areolae.

Example:

A Treatise on the British Freshwater Algae
by G.S. West & F.E. Fritsch.
(*Coscinodiscus*)
...radiating punctulations and areolations.

Armilla {P}

Latin. armilla - an armet.

A bracelet or a frill.

Example:

H.M.S. Challenger - Report on the Diatomaceae
(Thalassiothrix)

...the inferior extremities being sunk in a small transparent cushion in the form of an armilla, which is destroyed by the action of heat.

Arroyo {Hy}

A water-carved channel or gully in arid country, usually rather small with steep banks, dry most of the time, due to infrequent rainfall and the shallowness of the cut which does not penetrate below the level of permanent ground water.

Example:

Radiolarian biostratigraphy of the Late Miocene in Baja California (A. M. Pérez-Guzmán) [1985]

Hanna and Grant (1926) reported for the Arroyo Hondo section a list of 104 diatom species comparable to those found in the Monterey Formation.

Asexual reproduction {P}{E}

Reproduction involving only the parent diatom cell.

Example:

Identification of a New Gene Family Expressed during the Onset of Sexual Reproduction in the Centric Diatom

Thalassiosira weissflogii (E.V. Armbrust) [1999]

Importantly, these newly formed large cells rapidly resume asexual reproduction...

Assemblage {P}

Late Latin. assimilare - to bring together

Ecology: Collection of plants and/or animals characteristically associated with a particular environment. Presence of the assemblage is commonly used as an indicator of that environment (cf random assemblage).

Example:

Two Late-Glacial (Late Devensian) Diatom Assemblage

Profiles from Northern Scotland (E.Y. Haworth) [1976]

Two profiles of the diatom assemblages in lake sediments of Late Devensian age have...

Assemblage zone {H}

Late Latin. assimilare - to bring together. plus Greek. zonus - a girdle.

Paleontology: Stratigraphic unit or local level (horizon) of stratigraphic unit characterized by an assemblage of plants and/or animals.

Example:

Diatom-based evidence for abrupt climate changes during the Late Glacial in the Southern Carpathian Mountains (K. Buczkó) [2009]

The first diatom assemblage zone can be divided into two significantly ...

Association {P}

In combination. Latin. ad - to, socius - companion

A large number of organisms in a specific geographic area constituting a community with one or two dominant species

Or

A connection of things by some common factor; union.

Example:

Chitin in Diatoms and Its Association with the Cell Wall
(C. A. Durkin) [2009]

The association of chitin with the cell wall should be considered in other diatom species;...

Astaxanthin {P}

Astaxanthin is a carotenoid. It belongs to a larger class of phytochemicals known as terpenes. It is classified as a xanthophyll, which means "yellow leaves".

Example:

Among single-species diets, a diatom and a green algal cyst yielded the highest astaxanthin levels in copepods...

Asymmetrical {F}

In combination. Greek. a (privative), symmetria - symmetry.

Lacking symmetry. Not the same on either side of an axis. See also Symmetrical.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(Gomphonema genus)

Valve naviculoid, asymmetrical, one of the apices narrower...

Atlantic Ocean {H}

Greek. atlantos. plus French. oceanne.

One of the main oceanic areas of the world. Area = 82,441,000 km². It is relatively (on average) shallow (3,310 m), warm (3.73o C) and most saline (34.90 ppt), of the three warmwater oceans.

Example:

Distribution of spring phytoplankton (mainly diatoms) in the upper 50 m of the Southwestern Atlantic Ocean (30-61°S) (H. F. Olguín) [2006]

Our results show that, in the Southwestern Atlantic Ocean, diatom distribution patterns in the sediments differ very significantly from...

Attenuated {G}{F}

Latin. attenuatus - thinned (attenuo - to lessen, diminish)

Made thin or slender in girth or transverse thickness; tapered off - narrowing to a point.

Example:

Pritchard's Infusoria
(Navicula viridula)

...slender and truncated on one side, and attenuated and obtuse on the other.

Atoll {O}{E}

A ring shaped reef composed largely of coral. These features are quite common in the

tropical waters of the Pacific Ocean.

Example:

Ingestion of detritus by the lagoon pelagic community at Eniwetok Atoll (R. P. Gerber) [1974]

Water from outside the atoll enters the lagoon via this pass.

Auricular {G}

Latin. auricula (diminutive of auris) - the ear.

Shaped like an ear.

Example:

Marine Phytoplankton Atlas of Kuwait's Waters (Manal Al-Kandari et al) [2009]

Valves auricular or reniform, with the dorsal margin raised in the form of a ridge carrying the raphe.

Austral {H}

Latin. Austur - the South Wind

Southern. Pertaining to zonal areas south of the equator, usually applied to the temperate zone, especially the cold temperate (cf boreal).

Example:

Late austral spring diatom distribution between New Zealand and the Ross Ice Shelf, Antarctica; hydrographic and sediment correlations (L. H. Burckle) [1987]

Autochthonous {P}{E}

Greek. autochthon - sprung from the soil.

Matter or production of material which is formed within the water body. i.e. carbon formed by phytoplankton. This is a specific meaning relative to water ecology. The strict meaning is - plant or animal formed in the region where it is found.

Example:

Diatoms as particulate tracers in the water column in the eastern english channel (M. F. Huault) [1994]
Samples of surface water also contain autochthonous diatoms which appear to...

Autogamy {P}

In combination. Greek. Autos - self, gamos - marriage.

Sexual fusion of two cells. Self fertilisation. (See Also Auxospore)

Example:

The Biology of the Algae by F. E. Round.

Another type of fusion is illustrated by some diatoms in which daughter nuclei fuse without release from the parent cell (autogamy).

Autopotamic {P}

In combination. Greek. autos - self, potamus - a river

Organisms adapted to streams and completing their life cycles in streams.

Example:

Freshwater Investigations during the last Five Years (H. B. Ward) [1898]

He distinguishes ... autopotamic forms which find their conditions of existence only in flowing water.

Autotrophic {P}{O}{E}

In combinaion. Greek. autos - self, trophe - food

Used to describe cells that are capable of synthesizing organic matter. E.g. in algae via photosynthesis.

Example:

Disentangling the effects of water chemistry and substratum structure on moss-dwelling unicellular and multicellular micro-organisms in spring-fens (P. Hajkova) [2011]

The aim was to compare unicellular autotrophic diatoms, unicellular heterotrophic testate amoebae and multicellular heterotrophic monogonont rotifers...

Auxiliary Line {F}

Latin. auxiliaris - help, plus Old English. line.

Example:

A Treatise on the Diatomaceae by Henri van Heurck. (*Nitzschia angularis*) auxiliary lines clearly visible; transverse striae delicate...

Auxospore {P}

In combination. Greek. auxein - to increase, spora - a seed.

The name given to a cell formed by the sexual fusion (autogamy) of two cells. An auxospore may also be formed when a cell reaches its maximum size by purely vegetative processes. (The Auxospore may also be termed a Zygote)

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour. (Reproduction)

It is supposed that the main reason for auxospore formation is to bring the cells to a large size again...

Awl-shaped {F}

Old English. ael plus Old Norse. - skapa.

An awl is a pointed instrument used to bore holes. Thus narrow and tapering to a point. See also Subulate.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck. (*Biddulphia Baileyii*) Valve furnished with two long awl-shaped spines;...

Awn {F}

Old Norse. ogn.

A bristly process, usually associated with the beards of barley.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour. (*Chaetoceros* genus)

...on the corners, a long thick or thin bristle, sometimes called an awn.

Axenic {P}

A pure culture.

Example:

Freshwater Algae - Their Microscopic World Explored
by H. Canter-Lund & J.W.G. Lund.

Axes (pl.), Axis (sing.) {G}

Latin. axis.

Lines or line about which the parts of a figure are symmetrically or systematically arranged. In diatoms, however, the axis is perceived to be a line joining the two poles or apices in a pennate frustule or a line running through the centre of a centric valve to the margins on either side.

Example:

H.M.S. Challenger - Report on the Diatomaceae
(*Asterionella glacialis*[referring to *A. bleakleyii*])
...the presence, on the zonal side, of two small
symmetrical lines, which run in the direction of their
long axes.

Axial Area {G}

Latin. axis - an axle, a broad plank. plus Latin. area - an open space.

The plain (hyaline) area between the raphe and the ends of any transverse striae. In some of the older literature this area may be referred to as the pseudoraphe (when considering the araphid diatoms)

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(*Stenoneis* genus)
Transverse striae fine. Axial area indistinct.

B

Bacillar, Bacciliform {F}

Late Latin. bacillus - diminutive of baculus - a rod.

A term applied to a frustule that is longer than it is broad. From Bacillary - the shape of of a bacillus - rod-like.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
...called bacillar when it is much longer than it is
broad, as in *Synedra*...

Backflow {Hy}

The backing up of water through a conduit or channel in the direction opposite to normal flow.

Example:

Hamilton Harbour, Ontario: 8300 years of limnological and environmental change inferred from microfossil and isotopic analyses (H. C. Duthie) [1996]
...here backflow occurs in periods of high Lake Ontario water level, carrying in euplanktonic diatoms.

Backshore {O}{E}

Area behind the shore. This coastal feature is located between the beach berm and the backshore slope.

Example:

Diatoms as an aid in identifying late-Holocene tsunami deposits (E. Hemphill-Haley) [1996]

Diatom assemblages from backshore dunes do not resemble the tsunami assemblage.

Backswamp {O}

Marshy low lying area in a stream's floodplain. Commonly found behind levees.

Example:

Last Glacial and Holocene fluvial wetland sedimentary stratigraphy: Comparison between Soro-ri and Jangheung-ri archeological sites, Korea (J. Y. Kim) [2008]

Fluvial sedimentary sequences are interpreted to be associated with backswamp organic muds of last glacial age.

Backwash {O}

The return water flow of swash. This sheet of water flows back to ocean because of gravity.

Example:

Diatom biostratigraphy of tsunami deposits: Examples from the 1998 Papua New Guinea tsunami (Sue Dawson) [2007]

The preservation is variable, and the data show an, often chaotic, assemblage that can be attributed to the tsunami waves incorporating and depositing diatoms from distinctive habitat zones during their runup and subsequent backwash.

Backwater {Hy}

A body of water in which the flow is slowed or turned back by an obstruction such as a bridge or dam, an opposing current, or the movement of the tide.

Example:

The Estimation of Plant Pigments of Cochin Backwater During the Monsoon Months (S. Z. Qasim) [1967]

The phytoplankton crop of the backwater during the monsoon months (June- September) was largely made up of diatoms and dinoflagellates...

Baculiform {F}

Latin. baculum - a stick.

Shaped like a stick.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(Planktoniella)

...and by the baculiform appearance of the girdle face.

Bald {F}

Origin unknown.

Being devoid of any ornament.

Example:

Notes on Diatoms by F.B. Taylor

107 - ...and the next layer with feebler markings and a bald centre.

Balustrade {F}

Greek. balaustion - a pomegranate flower.

A row of small pillars capped by a continuous rail.

Example:

A Beginner's Guide to Freshwater Algae

by Hilary Belcher & Erica Swale

(Surirella)

Edge of valve often forms balustrade-like 'wing'.

Band {F}

Middle English. bande.

Possible referring to girdle bands but may also refer to a ribbon like structure of filament forming diatoms. Also areas of a valve differentiated in some way from an adjacent area.

Example:

Pritchard's Infusoria

(Achnanthes)

They are developed in the form of simple pedicled chains (tablets or bands), which look like little standards.

Band-shaped {P}{F}

Diatom colony type. Usually those diatoms that are attached along the entire valve face. Also termed ribbon-shaped.

Example:

Bank {Hy}

Middle English. Banke.

The sloping ground that borders a stream and confines the water in the natural channel when the water level, or flow, is normal. Banks are called right or left as viewed facing in the direction of the flow.

Example:

The Development and Application of a Diatom- Based Quantitative Reconstruction Technique in Forensic Science (B. P. Horton) [2006]

At each sampling site, we collected diatom samples up-stream of the local weir from a variety of river bed and river bank habitats to permit comparisons...

Bar {F}

Old French. barre.

Usually referring to an elongated area of hyaline silica.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.

(Amphora acuta)

Nodule elongated into a strong transverse bar.

Bar {O}

Coarse grained deposit of sediment from a stream or ocean currents.

Example:

The Salt Pond, Chacachacare Island (Peter R. Bacon)
On the south side of Chacachacsre Island a sand and shingle bar has grown across a bay and trapped a small body of water variously...

Barrage {Hy}{H}

Any artificial obstruction placed in water to increase water level or divert it. Usually the idea is to control peak flow for later release.

Example:

Flow Regulaton for Water Quality (Chlorophyll A)
Improvement (K. S. Jeong) [2010]
...since the construction of estuarine barrage, resulting in serious proliferations of cyanobacteria in summer and diatoms in winter...

Barrel {G}

French. baril.

A centrally inflated cylinder. Usually used to describe an entire frustule shape.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.
(*Amphora angusta*)
...truncate at the ends, so as to form a somewhat elegant barrel shape.

Barrier bar {Hy}

An elongate offshore ridge, submerged at least at high tide, built up by the action of waves or currents.

Example:

Profile of the Barnegat Bay [1990]
Sediments consisting of higher proportions of sand are associated with higher energy environments and are located at inlets and along parts of the barrier bay shore where temporary inlets may have been opened or barrier-derived sediments deposited during storms.

Barrier Beach {O}{E}

A long and narrow beach of sand and/or gravel that runs parallel to the coastline and is not submerged by the tide.

Example:

Profile of the Barnegat Bay [1990]
Important ecosystems in the study area that may support threatened or endangered plant species include aquatic environments, barrier beaches, salt marshes, freshwater marshes, bogs, lowland swamp forests, pine forests, hardwood forests, and nonforested vegetated areas.

Barrier Island {O}{E}

Long, narrow islands of sand and/or gravel that are usually aligned parallel to the shore

of some coasts.

Example:

Basal part {F}

French. base. Old English. part.

The region of a feature proximate to the valve.

Example:

Rines, J. E. B. & P. E. Hargraves - The Chaetoceros
- Bibliotheca Phycologica (79)

Basal Pole {F}

Latin/Greek. basis. plus Latin. polus:Greek. polos - pivot, axis.

The pole of (point at which) a frustule is attached to the substratum, usually the narrower pole in a Heteropolar diatom. See Also Foot Pole.

Example:

Diatoms from the Colombian and Peruvian Amazon: the Genera
Encyonema, Encyonopsis and Gomphonema (A. A. Vouilloud)
[2010]

...except at the basal pole where they are strongly
radiate.

Basal Siliceous Layer {F}

First layer of a diatom frustule. Deposited during initial valve formation.

Example:

Morphology and taxonomic position of the Late Cretaceous
diatom genus Pomphodiscus (V. A. Nikolaev) [2000]
Frustule is discoid; valves are circular and weakly
convex. An ovoid, circular chamber of different size is
located at a central or sub-central position. The chamber
is formed by an inflation and separation of the basal
siliceous layer into two layers...

Base flow {Hy}{E}

The sustained low flow of a stream, usually ground-water inflow to the stream channel.

Example:

Epipsammic diatoms in streams influenced by urban
pollution, São Carlos, SP, Brazil (T. Bere) [2010]
Epipsammic diatoms and water quality sampling was done at
7 sites during summer base flow period.

Basic {Hy}{E}

The opposite of acidic; water that has a pH of greater than 7. Alkaline.

Example:

Basic Fixed Sites {Hy}

Sites on streams at which streamflow is measured and samples are collected for
temperature, salinity, suspended sediment, major ions and metals, nutrients, and
organic carbon to assess the broad-scale spatial and temporal character and transport of
inorganic constituents of streamwater in relation to hydrologic conditions and
environmental settings.

Example:

Microbiological Monitoring for the US Geological Survey

National Water Quality Assessment Program (D. S. Francy)
[2000]

...basic fixed sites are sampled 15 to 18 times a year for
2 years...

Basin {Hy}

An area having a common outlet for its surface runoff.

Example:

Diatom Succession in a Core from Pickerel Lake,
Northeastern South Dakota (E. Y. Haworth) [1972]

Diatom zone IV is largely transitional, corresponding to
the time when woodland was once again developing around
the margins of the lake basin.

Basionym {P}

Original name given to a genus or species, which is retained when or if transferred to
another grouping (also written Basionym).

Example:

The identity of *Sellaphora bacillum* (Ehrenberg) D.G. Mann
(Regine Jahn) [2008]

...however, rather than cite the first basionym of
Navicula bacillum EHRENBERG 1839, MANN cited...

Basonym {P}

Original name given to a genus or species, which is retained when or if transferred to
another grouping (also written Basionym).

Example:

Biddulphioid Diatoms. II: The Morphology and Systematics
of the Pseudocellate Species, *Biddulphia biddulphiana*
(M.A. Hoban) [1983]

[Basonym = *Biddulphia longicruris* Greville ...]

Bathyal zone {H}

In combination. Greek. bathys - deep, Greek. zone - a girdle

A subdivision of the oceanic benthic environment encompassing the zone between 200
- 2000 m, roughly the zone of the continental margin (cf shelf break, slope, rise).

Example:

Distribution of foraminifera, radiolaria and diatoms in
sediments of the Gulf of California (O. L. Bandy) [1961]

Planktonic and benthonic Foraminifera are more abundant
than diatoms and Radiolaria in sediments of the
continental shelf and in the upper bathyal zone;...

Bathymetry (Bathymetric) {O}{E}

In combination. Greek. bathys - deep, metron - measure.

Measurement of the depth of large bodies of water

Example:

Journal of Ecology Vol. 3, No. 3, Sep., 1915 - A New
Bathymetric Record for Attached Algae and Diatoms in Lake
Ontario by E. M. Kindle

Bathypelagic {H}

In combination. Greek. bathys - deep, Greek. pelagos - sea

(1) Zone of pelagic oceanic environment extending from 1000 m to top of abyssopelagic (2000 m) where the latter zone is recognized.

(2) Zone of pelagic oceanic environment in which diel changes in sunlight are absent or of insufficient excursion to cue diel vertical migration. Part of the aphotic (qv) zone.

Example:

The American Naturalist Vol. 80, No. 793, Jul.-Aug., 1946
The Means of Dispersal of Bathypelagic Animals in the North and South Atlantic Oceans by Dr. Wesley R. Coe

Bay {O}

A body of sheltered water found in a crescent shaped coastal configuration of land.

Example:

Canadian Journal of Botany, 1981, 59:1793-1810 The diatoms and dinoflagellates of Hudson Bay by J. T. Anderson, J. C. Roff, J. Gerrath

Bayou {E}

An inlet or outlet, often marshy. A slough.

Example:

Dredging impact on an urbanized Florida bayou: effects on benthos and algal-periphyton. (M. A. Lewis) [2001]
There were several post-dredging taxonomic structural changes in the diatom-dominated, periphyton community but differences in mean density and three diversity indices were not significant.

Beach {O}

The terrestrial interface area in between land and a water body where there are accumulations of unconsolidated sediments like sand and gravel. These deposits are laid down by the action of breaking waves.

Example:

Nature 86, 554-554 (22 June 1911) Dinoflagellates and Diatoms on the Beach by W. A. HERDMAN

Beading, Beads {F}

Old English. gebed - prayer (associated with rosary)

Regular features (puncta, areola, etc.) appearing as a string of beads.

Example:

Marine Diatoms of the Philippine Islands by A. Mann
(Achnanthes compacta)
...under valve crossed by double rows of beading separated by costae;...

Beak {F}

Latin. beccus - a cock's bill.

A pointed process or projection.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.
(Amphora crassa)

...the dorsal margin, which, at the apices, bends inwards,

forming short, rounded beaks.

Bed material {Hy}

Sediment composing the streambed.

Example:

Grain Size along Two Gravel-Bed Rivers: Statistical Variation, Spatial Pattern and Sedimentary Links by Stephen Rice and Michael Church (1997)

The spatial variation of bed material grain size along gravel-bed rivers has been ...

Bed sediment {Hy}

The material that temporarily is stationary in the bottom of a stream or other watercourse.

Example:

Diatom shell of the Kawaguchiko lake bed sediment (core).
by K YOSHIZAWA [1998]

Bedload {O}

Sediment transported in contact with the bed.

Example:

Predicting river diatom removal after shear stress induced by ice melting by F. Bona, V. La Morgia, E. Falasco [2011]
...the bed load of the Dora di Veny catchment is the highest in the...

Belt {F}

Old English. belt.

Often referring to the girdle but sometimes to a submarginal feature on a valve.

Example:

H.M.S. Challenger - Report on the Diatomaceae.
(*Eucampia balaustium*)

In some frustules a smooth belt may be observed between the two valves.

Belt View {F}

Old English. belt. plus French. vue - to see.

A term sometimes used when referring to the girdle view. (Dictionary definition of Belt - a girdle, zone.)

Example:

Simbirsk Diatoms by Otto N. Witt
(*Pyrgodiscus armatus*)

I have subjoined one in shield and belt views.

Benthic, Benthonic, Benthos {H}{Hy}{O}{E}

Greek. benthos - depth.

Referring to something that lives on the bottom of an aquatic environment.

Lying on or in sediments or rocks, on plants [epiphytic], in rocks [epilithon], in or on sand [episammic] or on or in mud [epipelon] (Opposite of Planktonic)

Example:

The Morphology of the Diatom Frustule

by H.G. Barber & E.Y. Haworth (*Nitzschia*)

Single cells, benthic or planktonic, usually

unattached;...

Benthic boundary region {H}

Greek. benthos - deep, Late Latin. bodina - a boundary, Latin. regio - to rule

That stratum of water extending upward from the bottom to that depth where the bottom has virtually no effect upon water movement (cf nepheloid layer).

Example:

ROBBINS, J.A., and B.J. EADIE. Seasonal cycling of trace elements in Lake Michigan

...was transferred to the benthic boundary region below 60m.

Benthopelagic {H}

In combination. Greek. benthos - deep, pelagos - sea

Pelagic organisms living in ecological association with the bottom, not on it or in it, but influenced by it and coactively interacting with components of the bottom community.

Example:

Siliceous Sponges as a Silicon Sink: An Overlooked Aspect of Benthopelagic coupling in the marine silicon cycle by M Maldonado [2005]

Si availability for diatoms, particularly in Si-depleted environments. Altogether, our data strongly suggest that the role of sponges in the benthopelagic ...

Benthos {H}{O}

Greek. benthos - deep

In freshwater and marine ecosystems, the assemblage of organisms attached to, resting on, moving on or in, or living within the bottom substratum/sediments (adjectival form: benthic)(cf demersal, infauna, epifauna).

Example:

Continental diatom biodiversity in stream benthos declines as more nutrients become limiting by Sophia I. Passy [2008]

The patterns found in the two communities were opposite: as more resources became limiting, diatom richness declined in the benthos but increased in the phytoplankton.

Bergmehl {P}

German.

Example:

Notes on Diatoms by F.B. Taylor
149 -

Berm {O}{E}

Low hill of sand that forms along coastal beaches. Also a ledge or bench dividing a stream or separating a water course from surrounding land.

Example:

Net Phytoplankton of the Ala Wai Canal, O'ahu, Hawai'i (K. S. Beach, R. Harris et al) [1995]

These algae may be restricted to this part of the canal,

in part, because the sediment berm formed adjacent to the Manoa-Palolo Stream outfall restricts water motion.

Beset {F}

Old English. besettan - to set.

To surround or set out with.

Example:

Marine Diatoms of the Philippine Islands by A. Mann
(*Surirella continuata*)

Valve a broad oval, the outer rim narrow, stout, finely crossbarred and beset with a row of minute processes near the outer edge;...

Beta {F}

Greek

The Greek letter used to delineate two similar forms, possibly transitory - Alpha and Beta types.

Example:

On Some New Species of Fresh-water Diatomaceae
by W. Gregory.

(*Navicula lacustris*)

Bevelled {F}

French. beveau.

An acute angle trimmed at its apex thereby forming two obtuse angles. This word is normally used to refer to the face/side junction of a valve, but may also be used to describe a shape within another feature.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.
(*Navicula maxima*)

...slightly expanded at the ends, the angles being bevelled.

Biangular {G}{F}

In combination. Latin. bi - two, angulus.

Containing two angles.

Example:

Note on Diatoms by F.B. Taylor.
(Structure and Markings - 63)

...others again are biangular...

Biarculate {F}

In combination. Latin. bi - twice, arcus - a bow.

Double arched. Curved on both ends

Example:

H.M.S. Challenger - Report on the Diatomaceae (*Amphora scalaris*)

In this the dorsal line, like the ventral profile, is singularly biarcuate, while the raphe is...

Biconical {F}

In combination. Latin. bi - twice. Greek conos - a cone.

Bearing two cone shaped appendages.

Example:

The Morphology of the Diatom Frustule
by H.G. Barber & E.Y. Haworth Valve centric, produced
biconcally.

Biconstricted {F}

In combination. Latin. bi - twice, contrigere - to press.

Having a double neck or the outline being pressed together at two different points.

Example:

The Diatomaceae of Philadelphia and Vicinity

by C.S. Boyer.

(Gomphonema montanum)

Valve slightly biconstricted, with obtuse apex...

Biconvex {F}

In combination. Latin. bi - twice, convexus - to carry.

Convex (rounded and raised) on both sides.

Example:

A Treatise on the British Freshwater Algae

by G.S. West & F.E. Fritsch.

(Cymbella cuspidata)

...with unequally biconvex valves...

Bicrescentic {F}

In combination. Latin. bi - twice, crescere - to grow.

Formed of two crescents placed vertically. As in the figure 3.

Example:

British Diatomaceae by Arthur Scott Donkin.

(Navicula abrupta)

...tapering towards the extremities, with a bicrescentic
inner border, median band with a convex outer border;...

Biddulphiform {F}

Biddulphia - Named after a Miss Biddulph

Shaped like a Biddulphia.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.

(Syndetoneis genus)

Valves dissimilar, with two marginal biddulphiform
elevations,...

Bidentate(d) {F}

In combination. Latin. bi - twice, dentatus - toothed; having teeth.

Two toothed. Though 'bidentated' appears to refer to 'two depressions or undulations'
rather than teeth.

Example:

Pritchard's Infusoria

(Eunotia diodon)

...plane on the ventral side, and obtusely bidentated at
the middle of the back.

Bifid {F}

In combination. Latin. bi - twice, findere - to cleave or split.

Cleft in two.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(*Syndetoneis* genus)
The horn of one of the valves with its apex dilated,
somewhat bifid;...

Bifurcate, Bifurcation {G}

Latin. bifurcus - two-forked.

Twice forked.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.
(*Coscinodiscus umbonatus*)
...the space is often filled up with a bifurcation of
rays...

Bifurcated raphe {F}

Latin. bifurcus - two-forked. plus Greek. rhaphe - a seam-like junction, a ridge.

A raphe that exhibits a secondary raphe branching from the principal raphe to which
the secondary raphe ultimately returns. As in *Navicula nobilis*.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(*Reicheltilia* genus)
...but in these hyaline spaces there is a delicate
bifurcated raphe, like that of...

Bight {E}

A small coastal indentation open to the sea.

Example:

Decomposition of diatoms and nutrient dynamics in
permeable North Sea sediments (S. Ehrenhauss) [2004]
In the mixed turbulent nearshore waters of the German
Bight, diatoms usually dominate over dinoflagellates.

Bilateral {G}

In combination. Latin. bi - twice, lateralis - a side.

Having two distinct sides. E.g. Bilateral Symmetry

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(*Fragilaria* genus)
Valves flat, without or with a rudimentary pseudoraphe,
bilaterally symmetrical, with lines or rows of puncta...

Bilobate, Bilobed {G}

In combination. Latin. bi - twice. Greek. lobos - a lobe.

Bearing two lobes. One at each end of the valve

Example:

H.M.S. Challenger - Report on the Diatomaceae (*Amphora*
philippinica)
An acute constriction also occurs in this bi-lobed species
from the Philippine Sea.

Bimammillate {F}

In combination. Latin. bi - two, mamilla - a breast, pap or teat.

Bearing two nipple-like protruberances.

Example:

New Species of Fossil or Pelagic Marine Diatoms
by J. Brun. Trans. J. W. Barker.
(*Stigmophora capitata*)

Line of the sides with an internal bimammilated curve,...

Binary Fission {P}

Latin. binarius - two by two. Latin. fissum - to cleave.

The splitting of a cell into two.

Example:

Diatoms normally reproduce by binary fission, where one 'mother cell' splits into two daughter cells

Biocoenosis (Biocenose) {P}

In combination. Greek. bios - life, koinos - common

An assemblage of organisms associated with a specific habitat type. A biotic community.

(cf thanatocoenosis).

Example:

Biocoenosis and thanatocoenosis of diatoms in a western Galician ría (P. Bernárdez) [2010]

A good agreement between the biocoenotic and the thanatocoenotic diatom community was...

Biogenic sediment {H}

In combination. Greek. bios - life, genesis - production. Latin. sedimentum - to sit.

A sediment of which 30% or more is derived from the activities of living things, eg limestone, radiolarian ooze, foraminiferan ooze etc.

Example:

Australian National Data Service

Biogenic sediment history from diatom remains in cores along Wilkes Land.

Biological oxygen demand (BOD) {O}

The amount of oxygen needed by the organisms living in a given area of water

Example:

The Phytoplankton Composition, Abundance and Temporal Variation of a Polluted Estuarine Creek in Lagos, Nigeria (I.C. Onyema) [2007]

...phosphorus, sulphate, biological oxygen demand and oil and grease are likely clear responses of diatoms to changing hydroclimatic characteristics...

Biomass {Hy}{E}

In combination. Greek. bios - life, plus Latin. massa - a lump.

The amount of living matter, in the form of organisms, present in a particular habitat, usually expressed as weight per unit area.

Example:

Comparative planktonic diatom biomass responses to lake and catchment disturbance (N.J. Anderson) [1994]

Planktonic diatom biomass (as biovolume) estimates were compared for three small lakes...

Biosphere {E}

In combination. Greek. bios – life, sphaera

1 : the part of the world in which life can exist

2 : living beings together with their environment

Example:

Diatoms are aquatic unicellular plants that represent the most abundant single source of oxygen producers in the biosphere...

Biota (Biotic) {Hy}{E}

Greek. bios – life.

Living organisms.

Example:

Ecological effects of flow regulation on macroinvertebrate and periphytic diatom assemblages in the Hawkesbury–Nepean River, Australia (I.O. Grouns) [2001]

The macroinvertebrate communities in three habitats and periphytic diatoms below the storages and weirs differed from the biota at unregulated...

Biotic Community {E}

A self-sustaining community of living things. An ecosystem.

Example:

A lacustrine sediment record of the last three interglacial periods from Clyde Foreland, Baffin Island, Nunavut (C. R. Wilson) [2011]

The extent of ice cover likely plays a large role in the biotic community of this lake; the diatom assemblages within the past...

Biotic Potential {E}

A population's maximum production rate given ideal surroundings and resources.

Example:

The potential effects of energy related activities on the seasonal trajectories of epiphytic marine diatoms (G. F. Coccetti) [1979]

...the abundances of individual species were due to niche packing and interspecific restraints on the biotic potential of selected diatom species as well as the changes in water quality.

Biotope {E}

An environmentally uniform area. The physical aspect of an ecosystem.

Example:

Database on Black Sea benthic diatoms (Bacillariophyta): its use for a comparative study of diversity peculiarities under technogenic pollution impacts (A. Petrov) [2007]

Benthic diatoms are closely associated with a certain biotope and are directly subjected to environmental conditions.

Bipartition {P}

In combination. Latin. bi - twice, partitus - divided.

Division into two parts.

Example:

A Treatise on the British Freshwater Algae
by G.S. West & F.E. Fritsch.

The multiplication of Diatoms takes place generally
at night, most commonly by successive bipartition.

Biplanar {G}{F}

Uncertain.

Example:

A Guide to the Morphology of the Diatom Frustule
by H. G. Barber & E.Y. Haworth.
(Nitzschia)

Valve biplanar in transapical axis...

Bipolar {G}

In combination. Latin. bi - having two, polus and Greek. polos - pivot, axis.

(1) Having two poles. Also - (2) occurring at both the Arctic and Antarctic.

Example:

(2) The Ocean by Sir John Murray

...says there are six or seven bipolar genera.

Biraphid {F}

In combination. Latin - bis - twice, plus Greek. rhaps - a seam.

Having a raphe system on both valves of the frustule.

Example:

Dispersal and colonization success of monoraphid vs.
biraphid diatoms (A. M. Giordimaina) [2005]

...change in relative abundance sizes of biraphid and
monoraphid diatoms colonizing artificial substrates...

Biseriate {G}

In combination. Latin. bi. - having two, series - a row, succession, chain.

Referring to a double row of some feature, but usually used in reference to rows of
pores.

Morphological note on the marine diatom *Achnanthes*
longipes (K. Toyoda) [2006]

The valve shape is panduriform to linear-lanceolate, with
biseriate striae

Bittern region {O}

The liquid remaining after sea water has been concentrated by evaporation until salt
has crystallized.

Example:

Biundulate {G}

In combination. Latin. bi - twice, undosus - full of waves, billowy.

Two waves or undulations on a valve side, margin or face

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(*Amphora Sarniensis*)

Frustule constricted at the median portion, with bi-undulated lobes, apices truncate,...

Bivalve(d) {F}

In combination. Latin. bi - twice, valva - a door-leaf.

Having two valves.

Example:

Pritchard's Infusoria

(Navicula)

...who are unattached by a pedicle (free), and have a simple bivalved or multivalved siliceous lorica.

Bivalve lorica {F}

In combination. Latin. bi - twice, valva - a door-leaf plus

Example:

Report on the Irish Diatomaceae by E. O'Meara.

(Tricerataeae)

Individuals free, with a bivalve lorica triangular...

Blistered {F}

Probably Old French. blestre.

Small transparent bubbles on the surface of the valve.

Example:

Report on the Irish Diatomaceae by E. O'Meara.

(Cyclotella dallasiana)

...more accurately described it as "puckered", or as if blistered.

Bloom {P}{O}

Old Norse. blom.

High concentration of phytoplankton in an area, caused by increased reproduction; often produces discoloration of the water

Example:

Algae and Fungi by C. J. Alexopoulos & H. C. Bold.

...Synura and the diatom, Asterionella, impart characteristic tastes to water supplies as do blooms of algae when they disintegrate.

Blur {F}

Unknown origin.

An ill-defined spot or smear.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.

(Truania)

Umbilical area covered with coarse scattered blurs.

Bog {Hy}{E}

Gaelic. Bog - soft.

A nutrient-poor, acidic wetland dominated by a waterlogged, spongy mat of sphagnum moss that ultimately forms a thick layer of acidic peat; generally has no inflow or outflow; fed primarily by rain water. See also Muskeg.

Example:

The Periodicity of Diatoms in Bogs (J. Hayward) [1957]

The Periodicity of Diatoms in Bogs each area and examined

separately for...

Bombiform {F}{G}

Shaped like a bee.

Example:

Border {F}

Old French. bordure.

Nearly always referring to Centric forms. This term is synonymous with Rim.

Example:

The Diatomaceae of Philadelphia and Vicinity
by C.S. Boyer.

(Pseudauliscus spinosus)

...robust spine inserted at one-fourth the radius from the
border which is narrow...

Boreal {H}{Hy}{E}

Greek. boreas.

Pertaining to the northern parts of the Northern Hemisphere, though strictly -
a climatic zone having a definite winter with snow and a short summer that is generally
hot, and which is characterized by a large annual range of temperature.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(Thalassiosira Nordenskioldii)

Distribution - Arctic and boreal Atlantic...

Boss {F}

Old French. boce.

A knob or stub. A piece of raised ornamentation.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.
(Coscinodiscus umbonatus)

...from its resemblance to a shield with a large boss in
the centre.

Bow-shaped {F}

Old English. boga.

See Arcuate.

Example:

Notes on Diatoms by F.B. Taylor

95 - ...and it is arcuate or bow-shaped in...

Bottom water mass {H}

Water lying at the deepest part of the water column in the ocean, eg
Antarctic Bottom Water.

Example:

Climate Variability of the Holocene, Site 1098, Palmer
Deep (P.F. Barker) [2001]

...fluctuations within each interval is probably not a
change in the bottom-water mass but lies in changes in the
diatom productivity of the surface water...

Boundary current {P}{O}

Northward or southward directed ocean current flowing parallel and close to a continental margin, caused by deflection of eastward and westward transoceanic currents at the continental margin as well as the wind stress curl in that region.

Example:

Submillennial-to-millennial variability of diatom production off Mauritania (O.E. Romero) [2008]

Under favorable nutrient conditions, diatoms act as important carriers of organic matter to the seafloor in eastern boundary current systems...

Boundary region {H}

In the pelagic, a zone where conditions change more rapidly (quantitatively undefined) than outside such zones, for example at the edge of boundary currents (qv) and at water mass boundaries (qv).

Example:

Evidence for solar forcing of sea-surface temperature on the North Icelandic Shelf during the late Holocene (Hui Jiang) [2005]

Even relatively minor changes in the circulation pattern are likely to be archived in the sedimentary record in this sensitive boundary region.

Brackish water {H}{Hy}{E}

Dutch. brak.

Seawater containing an admixture of freshwater, generally from river runoff (See also Estuary).

Water with a salinity intermediate between seawater and freshwater (containing from 1,000 to 10,000 milligrams per liter of dissolved solids).

Example:

Brackish-Water Pliocene Diatoms from the Etchegoin Formation of Central California (G.D. Hanna) [1929]

...the only fossils found in shale were brackish-water diatoms.

Brackish {H}

Dutch. brak.

Slightly salty water. See also Estuarine.

Example:

Littoral Diatoms of Chichester Harbour
by N. Ingram Hendey.

There exists, however, an intermediate community usually referred to as the brackish-water flora...

Braided stream {Hy}{E}

A stream characterized by an interlacing or tangled network of several small branching and reuniting shallow channels.

Example:

(Plio-)Pleistocene alluvial-lacustrine basin infill evolution in a strike-slip active zone (F. Suter) [2009]

...diatomites are encountered on both sides of the SSB and

are alternating with braided stream or alluvial deposits...

Branch {F}

Late Latin. branca - a beast's paw.

This word is used to describe a feature that splits. Subdivision.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(Dycladia genus)

...with resting spores having two horns armed with small branches on the primary valves.

Bridge {F}

Old English. brycg.

A silica structure spanning two features, valves or frustules.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(Chaetoceros genus)

The opposite bristles of neighbouring cells touch one another near their origin, usually directly, sometimes by a bridge, and are firmly fused together.

Brim {F}

Origin uncertain.

Referring to the brim of a hat.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.
(Coscinodiscus umbonatus)

The broad marginal zone or brim, and the very convex middle part...

Brine {Hy}{E}

Old English. Bryne - a burning.

Water that contains more than 35,000 milligrams per litre (35 parts per thousand) of dissolved solids.

Example:

Diatoms are able to live inside the brine channels which form a continuous network through sea ice. In the brine channels, diatoms will be ...

Bristles {F}

Old Norse. byrst.

See Spines.

Example:

Simbirsk Diatoms by Otto N. Witt
(Trinacria coronata)

Between these cones are formed three groups of three sharp bristles each.

Broad Girdle View {M}

Old English. brad. plus Old English. gyrdel. plus French. vue - view.

The side on view of a valve or frustule, where the majority of the frustule mantle is visible i.e. a side-on view at its widest.

Example:

Unusual diatoms linked to climatic events in the northeastern English Channel (F. Gómez) [2007]
The cells were slightly curved in broad girdle view, elevations long...

Brunel Group {F}

A term first coined by Brunel (1972) to categorise the divergence angles between setae when observed in valve view.

Example:

Rines, J.E.B. & P.E. Hargraves - The Chaetoceros
Bibliotheca Phycologica (79)
setae are oriented in a way similar to that of Brunel group II

Bullate, Bullose {F}

Latin. bulla.

Blistered or puckered.

Example:

A Treatise on the British Freshwater Algae
by G.S. West & F.E. Fritsch.
(Stephanodiscus)
...centre of valves sometimes bullate, with punctulations more or less in line with the marginal ones.

Bullulate {F}

Latin. bulla. (also Greek)

Bubble like.

Example:

The framework of silica is foam-like or bubbly (known as bullulate).

Buttress {F}

Old French. bouter - to push against.

Usually a hyaline support or prop.

Example:

Notes on Diatoms by F.B. Taylor
82 - ...often strengthened by costae or struts or buttresses on the inner side;...

C

c.d.m. {P}

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(Cyclotella comta)
Diameter .75 to 3 c.d.m.

CFS (Cubic Feet per Second) {Hy}

The flow rate or discharge equal to one cubic foot (of water, usually) per second. This rate is equivalent to approximately 7.48 gallons per second. This is also referred to as a

second-foot.

Example:

With an average annual flow of about 265 thousand cubic feet per second, the Columbia is the largest river by volume...

Cable {O}

A nautical unit of horizontal distance, equal to 600 feet (100 fathoms) and approximately one-tenth of a nautical mile .

Example:

Calamus {F}

Greek. kalamos - reed, cane or pen.

Shaped like the stem of a reed. (a calamus is actually the name of a pen made from the stem of a reed)

Example:

New Species of Fossil or Pelagic Marine Diatoms
by J. Brun. Trans. J. W. Barker.

(*Biddulphia calamus*)

...carrying four long apines in the form of a reed
(calamus).

Calyptra {F}

Greek. kalyptra - a veil.

A hood, covering or veil.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.

(*Rhizosolenia* genus)

...valves asymmetrical, generally terminating in a hood
(calyptra) surmounted by a bristle...

Calyptriform {F}

Greek. kalyptra - a veil.

Akin to a hood, covering or veil.

Example:

New Species of Fossil or Pelagic Marine Diatoms
by J. Brun. Trans. J. W. Barker.

(*Rhizosolenia cochlea*)

The calyptriform terminal ring is furnished with a flatly incurved mucro;...

Cameo {F}

Italian. Cammeo (of unknown origin).

Used to describe a raised area or portion of some diatom valves. As in the traditional jewellery piece.

Example:

Micromechanics in biogenic hydrated silica: Hinges and interlocking devices in diatoms (I. C. Gebeshuber and R. M. Crawford) [2006]

...even here, there are cameo and intaglio structures that may be similar in form and orientation to the radial features.

Camera (Camerae) {F}

Latin. Camera – a vault

Example:

Diatoms in Eastern Australia by Neils Foged.

(*Mastogloia noosaensis*)

The ventral camera is the biggest, ab. 3-4u broad..

Campanulate {F}

Italian. campana - a bell.

Of a bell-shape.

Example:

Littoral Diatoms of Chichester Harbour

by N. Ingram Hendey.

Marginal costae form campanulate rays which converge towards the centre.

Canal Pores {F}

Latin. canalis - a pipe, channel. plus Greek. poros - a passage.

Pores that are recessed in a hyaline canal.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.

(*Campylodiscus* genus)

Canal-pores distinct, usually in parallel rows.

Canal Raphe {F}

Latin. canalis - a pipe, channel. plus Greek. rhaps - a seam-like junction, a ridge.

A raphe that is formed within a groove or channel. Usually apparent on valves with a keel or crest. Internal openings of the canal are termed portules.

Example:

Notes on Diatoms by F.B. Taylor

95 - In *Nitzschia* and the *Surirelleae* the raphe or

"canal-raphe" lies in the keel or wing,...

Canaliculi (pl.), Canaliculus (sing.) {F}

Latin. canalis - a water pipe.

Small furrow or channel.

Example:

H.M.S. Challenger - Report on the Diatomaceae (*Surirella* dives)

This beautiful elliptical frustule is noteworthy on account of its well-developed canaliculi, which originate from the centre of the valve.

Canopeum {F}

Latin. meaning Canopy.

External siliceous covering slightly or even distinctly elevated from the valve face.

This may or may not extend over the whole surface of the frustule. Normally only detected using SEM technology it may be encountered as particles in broken samples.

Example:

Fallacia cassubiae sp. nov., a new brackish-water diatom from the Puck Bay, Poland (Witowski, A.) [1991]

...expanded central area and the extent of the canopeum is limited to the lyra structure...

Canopy angle {Hy}

Latin. canopeum – canopy, and Old English. angul – hook.

Generally, a measure of the openness of a stream to sunlight. Specifically, the angle formed by an imaginary line from the highest structure (for example, tree, shrub, or bluff) on one bank to eye level at midchannel to the highest structure on the other bank.

Example:

Concepts and Approaches for the Bioassessment of Non-wadeable Streams and Rivers (J.E. Flotemersch) [2006]
...open canopy angle and riparian canopy closure. Open canopy angle is measured...

Capillary {F}

Latin. capillus - hair.

A fine bored tube or hair-like structure.

Example:

Report on the Irish Diatomaceae by E. O'Meara.
(Schizonema gracillimum)
Frond capillary, simple below;...

Capillary fringe {Hy}

Latin. capillus - hair. and Old French – frenge.

The zone above the water table in which water is held by surface tension. Water in the capillary fringe is under a pressure less than atmospheric.

Example:

Capillate {F}

Latin. capillus - hair.

Bearing Capilli (see below).

Example:

Rines, J.E.B. & P.E. Hargraves - The Chaetoceros
- Bibliotheca Phycologica (79)

Capillus, Capilli {F}

Latin. capillus - hair.

A long, hairlike spine.

Example:

Rines, J.E.B. & P.E. Hargraves - The Chaetoceros
- Bibliotheca Phycologica (79)

Capitate {G}{F}

Latin. capitalis - Pertaining to the head. Also - capito - a big-headed person.

Swollen at the apex i.e. terminating in a 'head' or 'knob'.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.
(Amphora probiscidea)
...contracted at the ends so as to be capitate, the heads having longer necks...

Capitula, Capitulum {F}

Latin. diminutive of capit - head.

The head of a process.

Example:

New Species of Fossil or Pelagic Marine Diatoms
by J. Brun. Trans. J. W. Barker.
(Aulacodiscus crater)
Six processes with capitula rounded and elevated;

Capsule-shaped {H}

Latin. capsula - diminutive of capsula - a case.

This tends to be an American term and relates to the classic pill-box shape.
In Britain this term would better relate to some of the more elongated, but still cylindrical forms.

Example:

The Algae - A review by G. W. Prescott.
Several genera are drum-shaped or capsule-shaped, as seen in side view.

Capuliform {F}

Possibly referring to a head or knob.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(Lepidodiscus)
Valve capuliform, with elevated margin...

Carboniferous {P}

Latin. carbo - coal.

The coal producing epoch.

Example:

Notes on Diatoms by F.B. Taylor
...and that he found diatoms in coal from Newcastle (Permian), and in coal of the Carboniferous age...

Carotene {P}

A reddish brown pigment.

See Xanthophyll.

Example:

Freshwater Algae - Their Microscopic World Explored
by H. Canter-Lund & J.W.G. Lund.

Caretonoid {P}

A pigment similar in nature to Carotene.

See Xanthophyll.

Example:

Freshwater Algae - Their Microscopic World Explored
by H. Canter-Lund & J.W.G. Lund.
The Plant Cell by William A. Jensen.
Caretonoids are yellow pigments that are widely found in Chloroplasts.

Carinal Dots {F}

Latin. carina - a keel. plus Dutch. dot - tuft.

See Keel Punctae.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
(Nitzschia thermalis)
...round carinal dots, the two median of which are

somewhat distant.

Carinoid

Latin. carina - a keel.

Carrying a keel or likened to a keel.

Example:

Diatoms of the British Coastal Waters by N. I. Hendey
p. 6 Hantzschia, Surirella, Campylodiscus

Carina {F}

Latin. carina - a keel.

A keel.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(Denticula subtilis)
...with acute apices, carina invisible;...

Carinate {F}

Latin. carina - a keel.

Possessing a keel. See Keel. See Wing.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(Donkinia genus)
Valve carinated, with keel sigmoid,...

Carr {E}

A wet area of deciduous scrub or woods grown from swampy soil.

Example:

Carrying capacity {P}{E}

The maximum population of a given organism that a particular environment can sustain; the K (saturation) value for growth of a species population following the logistic (qv) (sigmoid) growth model.

Example:

Development of a freshwater periphyton community as influenced by diatom mucilages (S. C. Roemer) [1984]
When the periphytic biomass exceeded the carrying capacity of its substrate,...

Cartilagenous {G}

Latin. cartilaginis - wickerwork.

Used to describe a thick mucilaginous stalk. Cartilage is a firm, pearly white substance and it may be this appearance that caused the name to be adopted.

Example:

Pritchard's Infusoria (Micromega corniculatum)
...has a common cartilagenous trunk. very much branched...

Catenate {H}

Latin. catena - a series of things connected together, a chain.

Valves lying end to end (or side to side) as in a chain or features one beside another.

Example:

Cavity {F}

Latin. cavus - hollow.

Example:

Notes on Diatoms by F.B. Taylor

83 - When the cavities giving rise to the appearance of striation...

Cell {F}

Old French. celle.

Often used to define a complete frustule.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.

(*Thalassiosira Nordenskioldii*)

Cells short, united...

Cell Axis {G}

Old French. celle. And Latin. axis – an axle.

Defining the axis of the frustule.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.

(General Morphology)

The cell axis is the axis through the centre of the valves.

Cell-cavity {F}

Old French. celle.

The space formed inside two valves when placed together, as in life.

Example:

Report on the Irish Diatomaceae by E. O'Meara.

(*Orthosira arenaria*)

Frustules very large; cell-cavity sub-spherical.

Cellular, Cellition, Cellulate {F}

Old French. celle.

Characterised by containing compartments or cells. Also - of open texture.

See Alveolate.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.

(*Biddulphia sculpta*)

structure cellular, cells irregular, of almost equal size throughout the valve...

Cellules, Cellulae {F}

Old French. celle.

Giving the appearance of small cells. Also Cellules is a term used by Van Heurck as a synonym for striae.

Example:

Diatoms from the West Indian Archipelago by P.T. Cleve.

(*Eupodiscus radiatus*)

The cellulae are larger and there are no marginal dots.

Cellulose {F}

Old French. celle.

Containing cells (as opposed to cellulose the compound)

See Alveolate.

Example:

Conspectus of the Families and Genera of the Diatomaceae -
The lens.

(*Endictya*)

Valve closely cellulose, with a well-marked, somewhat
dentate rim.

Central Area {F}

Latin. centrum. plus Latin. area - an open space.

Refers to the plain (hyaline) area in the centre of a valve that lies between the central pores of the raphe ends. This area may comprise a flattened portion and a raised portion, the latter commonly called the Central Nodule (see below)

Example:

The Morphology of the Diatom Frustule

by H.G. Barber & E.Y. Haworth (Frustulia)

Central area occasionally rounded or lanceolate...

Central Gyre species {P}

Latin. centrum and Greek gyros - a circle and Latin. species - kind.

A species limited to or most abundant within one of the main subtropical anticyclonic gyral systems. Also known as Centrifugal speciation

Example:

Central Nodule {F}

Latin. centrum. plus Latin. nodus - a knot.

A thickened, often raised, hyaline area at the centre of a valve between or within the area defined by the central pores of a raphe. The central nodule when it extends to the valve mantle is termed a stauros. See Also Central Area.

Example:

H.M.S. Challenger - Report on the Diatomaceae

(*Navicula zanzibarica*)

...the two spots, one of which occurs on each side of the
central nodule, are tolerably regular...

Central Pores {F}

Latin. centrum. plus Latin. porus.:Greek. poros - a passage.

The pores situated at the raphe ends adjacent to or in the central area.

Example:

New and Rare Diatoms from Oregon and Washington

by H. E. Sovereign.

(*Pinnularia subpalousiana*)

Raphe straight, threadlike, central pores bent to one
side...

Central Process {F}

Latin. centrum. Plus Latin. processus - forward

A feature found in the centre of a valve. It may be a hyaline area or a projection or a tube of some description.

Example:

Rines, J.E.B. & P.E. Hargraves - The Chaetoceros

- Bibliotheca Phycologica (79)

Central Space {F}

Latin. centrum. plus Latin. spatium.

Something of a misnomer as this actually refers to the plain hyaline area at the centre of a valve. See Central Area. See also Hyaline.

Example:

On the Polishing Slate of Archangelsk....

by Otto N. Witt.

(*Actinoptychus heterostrophus*)

...characteristic are the sharply-defined lines extending from the processes up to the central space;...

Central Sternum {F}

Latin. centrum. plus Greek. sternon - chest.

Apically-oriented costa which may or may not be perforated by a raphe slit. A central sternum that is not perforated by a raphe slit was formerly known as a pseudoraphe.

See also Pseudoraphe.

Example:

Central Water {H}

Latin. centrum. plus

One of the principal central upper water masses, originating in winter by cooling of relatively salty subtropical surface water, sinking and mixing (to some extent), to form upper water masses between the main thermocline and the stratum of Antarctic Intermediate Water (where present: upper boundary of AAIW at about 800 - 1000 m).

Example:

Central Water mass areas {H}

Latin. centrum. plus

Synonym of Central region.

Example:

Central Water species {P}

Latin. centrum. plus

Synonym of Central Gyre species.

Example:

Centrale {G}

Latin. centrum..

One of the two orders of diatoms. See also Pennale.

See Centric below

Example:

The Biology of the Algae by F. E. Round.

...composed of plankton in which Centrales are most abundant.

Centric(ae) {G}

Latin. centrum.

One of the two orders of diatoms. See also Pennateae.

To be termed Centric a valves patterning should be symmetrical about a central point (with more than two planes of symmetry)

Example:

The Biology of the Algae by F. E. Round.

This may indicate that the Centric group is older than the Pennate group, ...

Centripetally {F}

In combination. Latin. centrum - a sharp point. Latin. petere - to seek.

Tending to run towards the centre.

Example:

H.M.S. Challenger - Report on the Diatomaceae
(*Campylodiscus japonicus*)

These are separated by lines of short "thorns", which occur on the connecting zone, and run centripetally from the extreme margin.

Chain {P}

Old French. chaeine.

A number of features either linked end to end or one passing thru the other.

Example:

Diatoms of British Coastal Plankton by J. B. Sykes.
Cells united in long spirally twisted chains.

Chain Axis {F}

Old French. chaeine. plus axis - an axle, a broad plank.

The chain axis is a line through the longitudinal centre of the chain.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(*Chaetoceros diadema*)

Bristles springing from the corners of the cells, directed transversely to chain axis.

Chain Margin {F}

Old French. chaeine. plus

A line parallel to the chain axis.

Example:

Rines, J.E.B. & P.E. Hargraves - The *Chaetoceros*
- *Bibliotheca Phycologica* (79)

Chamber {F}

Latin. camera.:Greek. kamara - a vault, room.

Voids bounded by hyaline features.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(*Eupodiscus argus*)

Valve surface with polygonal chambers arranged in radial rows.

Channel {F}

French. chanel via Latin. canalis - a canal..

Normally a groove or furrow but also used to describe blank hyaline areas between features.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(*Tabulina* genus)

...furnished with hyaline channels, radiant and transverse.

Channel (watercourse) {Hy}

An open conduit either naturally or artificially created which periodically, or continuously contains moving water, or forms a connecting link between two bodies of water. River, creek, run, branch, anabranch, and tributary are some of the terms used to describe natural channels. Natural channels may be single or braided. Canal and floodway are some of the terms used to describe artificial channels.

Example:

The Population and Production Dynamics of Benthic Algae in an Artificial Recirculating Hard-Water Stream (A. F. H. Marker) [1982]

The seasonal succession of algae in the channel was very similar to that which occurs in local streams.

Chemocline {P}

In combination. Greek. chemeia – “the Egyptian black art” plus Greek. klinein – to lean

Example:

Freshwater Algae - Their Microscopic World Explored by H. Canter-Lund & J.W.G. Lund.

Chemosynthesis {O}{E}

In combination. Greek. chemeia – “the Egyptian black art” plus Greek. syn – with and thesis – a placing

Formation of organic compounds with energy derived from inorganic substances such as ammonia, sulfur and hydrogen. Typically at deep-sea vents.

Example:

Effects of shallow-water hydrothermal venting on biological communities of coastal marine ecosystems of the western Pacific (V. G. Tarasov) [2006]

Oxygenic photosynthesis of benthic diatoms, bacterial photosynthesis (anoxygenic photosynthesis) and autotrophic chemosynthesis in algobacterial...

Chitin {P}

Greek. chiton - a tunic.

Chitin, normally associated with insect exo-skeletons, forms fibrils which may link one cell to another. Chitin is a polymer of Acetylglucosamine.

Example:

The Algae - A review by G. W. Prescott.

Also extending from walls of some Centrales are fibers of chitin.

Chlorophyll {P}{E}

In combination. Greek. chloros - pale green. Greek. phyllon - leaf.

A group of green pigments that are active in photosynthesis. Three forms Chlorophyll-a, Chlorophyll-b and Chlorophyll-c.

Example:

The Plant Cell by William A. Jensen.

Light used in photosynthesis is absorbed by Chlorophyll.

Chlorophyll-a {P}

In combination. Greek. chloros - pale green. Greek. phyllon - leaf.
Primary photosynthetic pigment in algae and higher plants.
Example:

Chlorophyll-b {P}

In combination. Greek. chloros - pale green. Greek. phyllon - leaf.
Photosynthetic pigment found in algae and higher plants.
Example:

Chlorophyll-c {P}

In combination. Greek. chloros - pale green. Greek. phyllon - leaf.
Photosynthetic pigment found in lower plants and algae.
Example:

Chlorophyll maximum {P}

In combination. Greek. chloros - pale green. Greek. phyllon - leaf.
A layer in the sea where the concentration of chlorophyll is highest, indicating the presence of "shade-tolerant" phytoplankton. These are adapted to low levels of light intensity, and revealed as a subsurface peak in chlorophyll concentration at depths of 60 to 100 to 150 m. Especially evident in the open subtropical Pacific and Atlantic, thought to be a permanent feature within these central gyral areas.
Example:

Chloroplast {P}{E}

In combination. Greek. chloros - pale green. Greek. plastos - moulded.
The 'organ' of photosynthesis. A body that contains chlorophyll. Now generally known as a Plastid.
Example:
The Plant Cell by William A. Jensen.
Within the chloroplast there is an elaborate series of membranes...

Chromatic Adaptation {P}

In combination. Greek. chroma - colour. and Latin. adaptare - to fit.
Example:
Freshwater Algae - Their Microscopic World Explored
by H. Canter-Lund & J.W.G. Lund.

Chromatophore {P}

In combination. Greek. chroma - colour. Greek. phoros - bearing.
A pigment bearing body .
See Chloroplast, Endochrome, Plastid, Xanthoplast.
Example:
Diatoms of British Coastal Plankton by J. B. Sykes.
Chromatophores one, two or several, contained within the cell cavity...

Chromoplast {F}

In combination. Greek. chroma - colour. Greek. plastos - moulded.
Photosynthetic pigments are contained in specialized cell vacuoles termed plastids or chromoplasts or chloroplasts.

Example:

Diatoms from the South China Seas
by Dickman, Hodgkiss, Cheng & Gao.
(Glossary Entry)

Chrysophytes (Chrysophyta)

In combination. Greek. chrysos – gold, phyton – a plant

Chrysophytes - At one time considered a single Division but now divided as follows:

- Xanthophyta (yellow-green algae)
- Chrysophyta (golden brown algae)
- Bacillariophyta (diatoms)
- Haptophyta (haptomonads, coccolithophorids)

Example:

Cienega (Cienaga) {Hy}

A marshy area where the ground is wet due to the presence of seepage or springs.

Example:

Late Pleistocene to Middle Holocene Depositional
Environments at Mustang Springs, Southern Llano Estacado
(C. L. Hill) [1987]
...and Cyperaceae (sedges) are present in the cienega
deposits; while diatoms and scarce remains of Typha
(cattail) are present in the pond deposits.

Cilia {P}

Latin. cilium - eyelash.

See cilium.

Example:

Notes on Diatoms by F.B. Taylor
96 - ...has revived a former theory that cilia cause the
motion.

Ciliate {F}

Latin. cilium - eyelash.

Bearing a hair-like lash or fringe, or likened to cilia.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(*Rutilaria* genus)
Margins of valve pectinate, ciliate.

Cilium {F}

Latin. cilium - eyelash.

A hair like lash or fringe.

See Ciliate.

Example:

Freshwater Algae - Their Microscopic World Explored
by H. Canter-Lund & J.W.G. Lund.

Cingulum (pl.), Cingula (sing.) {F}

Latin. cingulum - a girdle or belt.

A part of the girdle associated with a single valve. A transverse groove that encircles the cell, made up of the girdle bands of a diatom

Example:

The Morphology of the Diatom Frustule
by H.G. Barber & E.Y. Haworth (Melosira)
...between mantle and girdle bands (cingulum).

Circler {F}

Latin. circulus - diminutive of circus - a ring.

A small circular band or hoop.

Example:

H.M.S. Challenger - Report on the Diatomaceae
(*Surirella grandiuscula*)

There is a circler of large canaliculi, which become...

Circular {G}

Old English. circul. Also Latin. circuitus;circuire;circum - a circle.

Frustule shape in valve view is a circle

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
(*Campylodiscus Ralfsii*)

Valve small, almost regularly circular, showing narrow costae...

Circulation {O}

Old English. circul. Also Latin. circuitus;circuire;circum - a circle.

The water current flow within a large area.

Example:

Diatom-inferred wind activity at Lac du Sommet, southern Québec, Canada: A multiproxy paleoclimate reconstruction based on diatoms, chironomids and pollen for the past 9500 years (S. Hausmann) [2011]

In general, diatom production was significantly correlated with diatom-inferred lake circulation.

Circumneutral {Hy}{H}

In combination. Latin. circum - around, neuter - neither

Said of water with a pH between 5.5 and 7.4; pH modifier used in the U.S. Fish and Wildlife Service wetland classification system.

Example:

Diatoms in Eastern Australia by Neils Foged.

Circumscribed {F}

In combination. Latin. circum - around. Latin. scriptum - to write.

An area which is enclosed or surrounded by another feature

Example:

H.M.S. Challenger - Report on the Diatomaceae
(*Surirella multicosata*)

...which is circumscribed by irregular rows of small transversely disposed lines.

Circumtropical {H}

In combination. Latin. circum - around.

Species found in tropical and warm-temperate areas of the land and/or ocean throughout the world or at least very broadly distributed within the zone of the tropics.

Example:

Biogeographical Studies of Marine Phytoplankton by (T. J. Smayda) [1958]

Planktoniella sol is a circumtropical diatom and found principally in oceanic regions.

Clade {E}

A group of organisms that includes their most recent common ancestor and all of their descendants.

Example:

Diatom genomes come of age (A. Vardi) [2009]

Diatoms are one of the most successful clades of eukaryotic, single-celled photosynthetic organisms in the contemporary ocean.

Cladistic biogeography {P}

Study of distribution based upon: knowledge of present distribution of taxa within monophyletic lineage, and estimate of phylogeny within that lineage. The approach is to account for the present distribution in the fewest presumed (deduced) vicariance or dispersal events consistent with that estimate of phylogeny.

Example:

Clapotis {O}

A standing wave phenomenon associated with the reflection of an ocean-wave train from a vertical surface, such as a breakwater or pier.

Example:

Clathrate {F}

Latin. clathrare – to furnish with a lattice

With irregular perforations or opening. Lattice-like.

Example:

Diatomaceae of North America (Rev. Francis Wolle) [1894]

Valves with a pseudo-raphe, and transverse rows of granules within square cells (clathrate); central and terminal nodules distinct.

Clavate {G}

Latin. clava - A knotty branch or club.

Club-shaped.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.

(*Licmophora Lyngbeii*)

Valve clavate, regularly attenuate up to the inferior third,...

Claw {F}

Old English. clawu.

Like the hooked nail of an animal.

Example:

Notes on Diatoms by F.B. Taylor

(Manner of Growth - 42)

...processes rising from the angles terminate in curved spines or claws...

Cleft {F}

Old English. cleofan.

A split.

Example:

British Diatomaceae by Arthur Scott Donkin.

(*Navicula hyalina*)

...terminal nodules appearing as if inserted into a cleft of the median line,....

Clepsydra {F}

In combination. Greek. kleptein - to steal. Greek. hydor - water.

An instrument for measuring time by the trickling of water. Thus, it refers to some sort of pipe structure.

A hollow projection.

Example:

New Species of Fossil or Pelagic Marine Diatoms

by J. Brun. Trans. J. W. Barker.

(*Campylodiscus clivosus*)

The rest of the space is punctate and finely striate; with a clepsydra faintly shown.

Climate {Hy}

Latin. clima - to slope.

The sum total of the meteorological elements that characterize the average and extreme conditions of the atmosphere over a long period of time at any one place or region of the Earth's surface.

Example:

Postglacial record of diatom assemblage changes related to climate in an alpine lake in the northern Rocky Mountains, Canada (T. L. Karst-Riddoch et al) [2005]

...changes in diatom assemblages to Holocene climate since ca. 10 300 cal. years BP at a small. (4 ha), alkaline, alpine tundra lake...

Climax community {P}

Greek. kleinen - to slope and Latin. communis - common.

Normally defined as the plant community in equilibrium with the zonal climate. In the sea a true climax community may be best exemplified by the seasonally monotonous central gyral areas.

Example:

Effect of iron limitation on the cadmium to phosphorus ratio of natural phytoplankton assemblages from the Southern Ocean (J. T. Cullen) [2003]

...the climax community was dominated by large diatoms of the genus *Fragillariopsis*, *Pseudonitzschia*, and *Nitzschia*...

Cline {P}{E}

Greek. klinein - to lean.

A gradual and nearly continuous monotonic change in a property, whether environmental (physical, eg thermocline; or chemical, eg nutricline) or biological (eg clinal variation in a character). Clines can be smooth (qv) or stepped (qv) and can

reverse in sign (increase or decrease from mean value). In biology typically applied to changes in gene frequencies or character states clinally distributed.

Example:

Clone, Clonal {P}

Greek. klon - shoot.

A population in which all the individuals have the same genetic fingerprint and have reproduced vegetatively.

Example:

Freshwater Algae -their Microscopic World Explored
by H. Canter-Lund & J.W.G. Lund
(Glossary)

Clone - A population derived asexually from a single ancestral cell.

Closed Basin {Hy}

A basin draining to some depression or pond within its area, from which water is lost only by evaporation or percolation. A basin without a surface outlet for precipitation.

Example:

An evaluation of the diatom response to Late Quaternary environmental change in two lakes in the Konya Basin, Turkey, by comparison with stable isotope data (J. M. Reed] [1999]

In palaeolimnological studies of closed-basin lakes, diatoms provide an excellent source of palaeoclimate data owing to their sensitivity to salinity...

Closed net haul {P}

See discrete depth sampling.

Example:

Club-Shaped {F}

Old Norse. klubba.

Shaped like a cudgel. Synonymous with Cuneate.

Example:

Pritchard's Infusoria
(*Echinella splendida*)

...the lorica is rather straight or club-shaped, with rounded ends...

Clypeate (Clypeiform) {G}

Latin. clypeus - a round shield.

Shaped like a shield.

Example:

On Some of the Rarer or Undescribed Species of Diatomaceae
by Thomas Brightwell.

(*Triceratium dubium*)

Valve clypeate, punctate...

Coalesce {F}

Latin. coalescere - to grow up.

Growing together or uniting into a single entity.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(*Hyalochaete* genus)

Bristles coalesced along a short portion of their length.

Coastal upwelling {P}

Latin. costa – rib, and Old English. wella – to boil.

Upwelling of subsurface waters impinging upon or nearby a coast; upwelling inshore of the shelf break. See also upwelling.

Example:

Peruvian coastal upwelling: Late Quaternary productivity changes revealed by diatoms (H. Schrader) [1991]

Several authors (Blasco, 1971; Richert, 1975; Margalef, 1978; De Mendiola, 1981) have described the diatom succession in coastal upwelling areas...

Coastal waters {H}

Latin. costa – rib, and Old English. waeter.

Ocean waters nearshore; the ocean region covering the continental shelves.

Example:

Diatom associations in shelf waters off Paraná State, Southern Brazil: annual variation in relation to environmental factors (L. F. Fernandes) [2004]

The first three groups are related to the influence of warm waters, carrying species to coastal waters, after the late fall/winter diatom bloom...

Coastal Wetland {O}

Habitat found along a coastline and is covered with ocean salt water for all or part of the year. Examples of this type of habitat include tidal marshes, bays, lagoons, tidal flats, and mangrove swamps.

Example:

Coastal zone {H}{Hy}

Latin. costa – rib, and Latin. zona – a girdle

General term for the nearshore region of the ocean; that portion of the ocean most influenced by land effects and freshwater runoff.

Example:

Peculiarities of diatom thanatocenoses formation in the sediments of the Eurasian Arctic seas (Y. I. Polyakova) [1994]

...distribution of freshwater diatoms entering the coastal zone with river water and. river ice depends on the abundance and distribution of river waters on...

Coastline {O}

The line that separates a land surface from an ocean or sea.

Example:

Coastal Diatom-Environment Relationships in the Brackish Baltic Sea (A. Ulanova) [2009]

...analyzed from a robust data set of diatom communities living on submerged stones along a 2000 km long coastline in the Baltic Sea area,...

Coccochromatic {P}

In combination. Greek. coccos - a berry. Greek. chroma - colour.

See also placochromatic

Example:

The Diatomaceae of Philadelphia and Vicinity
by C.S. Boyer.

...or as variously distributed granular masses
(coccochromatic) lining the inner walls.

Diatoms of the British Coastal Waters by N. I. Hendey
p. 3

Cock's-comb {F}

Example:

A Treatise on the Diatomaceae by Henri van Heurck.

(*Muelleriella limbata* v. *Cristagalli*)

Girdle face broad and like a hood, having the forms of a
cock's comb.

Coenocline {P}

Greek. koinos - common, Greek. klinein - to lean.

Gradient of communities along an environmental gradient, reflecting the changing
importance or frequency of different species populations in the community (cf
ecocline; superorganism concept).

Example:

Coherent, Cohering {F}

Latin. cohaerere - stick.

Sticking together or sticking to something.

Example:

Synopsis of the British Diatomaceae by W. Smith.

(*Coscinodiscus* genus)

Were the frustules of *Coscinodiscus eccentricus*, for
example, permanently coherent after self-division...

Coleoderm {P}

In combination. Greek. koleos - a sheath. Greek. derma - the skin.

An extension of a mucous envelope, an extension of which is used to attach a diatom
to its substrate.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.

(Introduction)

...covered with a more or less apparent mucous envelope
(called coleoderm), containing...

Collaplankton {P}

Plankton (qv) rendered buoyant by encasement in gelatinous envelopes; also spelled
kollaplankton.

Example:

Collar {F}

See Sheath.

Example:

Rines, J.E.B. & P.E. Hargraves - The *Chaetoceros*

- Bibliotheca Phycologica (79)

Colonial, Colony {H}{P}

Latin. colonia - a band of settlers.

Diatom cells forming a mass either in specific relation one to another or as an amorphous mass with all cells responsible for some element of the colony matrix.

Example:

Diatoms of British Coastal Plankton by J. B. Sykes.
...held together in large mucilagenous colonies.

Column {F}

Latin. columna - high.

An elongated 'upright' feature, usually cylindrical.

Example:

Some Fossil Diatoms from Barbados
by G. Dallas Hanna & A.L. Brigger
(Pyxilla boothi)
...this is surmounted by a massive vertical column about
ten times as long as the valve diameter;...

Comber {O}

A large ocean wave with high, breaking crest.

Example:

Combs {F}

Old English. camb.

This, in general, refers to the shape seen at the crest of a cock's comb.

Example:

Simbirsk Diatoms by Otto N. Witt
(*Trinacria princeps*)
...also the combs standing out from the triangular sides
of *T. trinacria* are absent...

Comma, Comma-shaped {F}

Greek. komma - part of a sentence.

Perforation through valve face whose external opening is comma (,) shaped.

Example:

(1) A Treatise on the Diatomaceae by Henri Van Heurck.
(*Navicula liber*)
...;terminal nodules, somewhat distant from the apices,
curved like a comma.
(2) A Treatise on the Diatomaceae by Henri Van Heurck.
(*Navicula subhamulata*)
Terminal nodules comma-shaped.

Comma Stigma {F}

Greek. komma - part of a sentence. plus Greek. stigma(tos) - tattoo-mark, brand.

Perforation through valve face whose external opening is comma (,) shaped and whose internal opening is slit-like.

Example:

The Morphology of the Diatom Frustule
by H.G. Barber & E.Y. Haworth Comma or dash stigma on one
side of the central area.

Commensalism {O}{P}{E}

In combination. Latin com – together plus mensa – a table

An intimate association between different organisms in which one is benefited and the other is neither harmed nor benefited

Example:

Production of a diatom-bacteria biofilm in a photobioreactor for aquaculture applications (R. E. Avendano-Herrera) [2007]

Diverse ecological relations between various bacteria and diatom species can include competition, commensalism, parasitism and other microbiologically...

Community {P}{Hy}

Latin. communis - together.

Applied to any group of species found living together in a particular environment.

Views of community organization range from random assemblages to communities as superorganisms. In the open ocean the concept of a community has a wide range from assemblage to biome.

Example:

The influence of land use on water quality and diatom community structures in urban and agriculturally stressed rivers (G. Walsh) [2009]

Epilithic diatom communities offer a holistic and integrated approach for assessing water quality as they remain in one place for a number of months...

Compartment {F}

In combination. Latin. com-. Latin. partis - a part.

A term sometimes used to describe a sector in a centric valve e.g. Actinoptychus.

Often occurring as 'Radial Compartment'.

Example:

Miocene and Pliocene Diatoms by W. W. Wornardt (Actinoptychus bismarckii)

Valves discoid, with six radial compartments, alternately raised and depressed.

Compensation depth {P}

From Latin. com –intention to, pensare – to weigh, and Old Norse - dypth

In aquatic ecosystems, the depth at which light penetration is so reduced that the rate of photosynthesis just balances the rate of respiration. This is generally at a depth where light intensity is about 1% of full daylight. Also called compensation level.

Example:

The loss of diatoms in the spring bloom (D. H. Cushing) [1992]

...quite clearly that the diatoms (nearly all Skeletonema costatum) sank below the compensation depth towards the end of the spring bloom...

Compensation level {O}

From Latin. com –intention to, pensare – to weigh, and Latin. lbella – a plummet (level)

Depth at which there is a balance between the oxygen produced by algae through photosynthesis and that consumed by them through respiration; net oxygen production is zero. The term is also applied to many other compounds/elements.

Example:

Changes in the importance of lotic and littoral diatoms in a high arctic lake over the last 191 years (S. D. Ludlam) [1996]

...the mixolimnion of the lake would decrease the depth of the compensation level and, therefore, the area available for the growth of littoral diatoms.

Competitive exclusion {P}

Latin. competere – to strive together, and in combination, Latin. ex – out, plus claudere – to shut.

The idea that two species with identical resources needs and utilization patterns may not indefinitely coexist in a stable environment (Gause's Principle or Rule). In this view one species will inevitably outcompete and eliminate the other species from the system. Commonly modeled by the Lotka-Volterra equations derived from the logistic model of population growth.

Example:

Monospecific planktonic diatom assemblages in the Paleo-Kathmandu Lake during the middle Brunhes Chron:

Implications for the paradox of the plankton (T. Hayashi) [2010]

Paleoecological records of planktonic diatoms in the Paleo-Kathmandu Lake seem to provide robust evidence for competitive exclusion at the evolutionary...

Complex {F}

In combination. Latin. com - together. Latin. plicaire - to fold.

Composed of many parts. Intricate.

Example:

On New Forms of Marine Diatomaceae by W. Gregory. (Navicula inconspicua)

Median line strong, complex, interrupted in the middle...

Compressed {F}

In combination. Latin. com - together. Latin. pressum - to press.

Pressed together. Usually referring to two linear features or sides which are pinched or pressed in towards one another.

Example:

Pritchard's Infusoria (Tessella)

...prismatic in shape, and (dilated and compressed) into the form of a table.

Concatenate {P}

Latin. catena - a chain.

Frustules linked end to end or face to face. See also catenate.

Example:

Littoral Diatoms of Chichester Harbour

by N. Ingram Hendey.
(*Biddulphia aurita*)
Concatenate colony.

Concave {G}{F}

Latin. concavus - hollow.

Curves inward apex to apex. Sometimes also used to describe a particular feature.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.

(*Pinnularia Allmaniana*)

Valve highly convex on one side, concave on the other.

Concentration {Hy}

In combination. Latin. con – together, centrum – point.

The amount or mass of a substance/organism present in a given volume or mass of sample. Usually expressed as microgram per liter (water sample) or micrograms per kilogram (sediment or tissue sample).

Example:

On diatom concentrations in lake sediments: results from an inter-laboratory comparison and other tests performed on a uniform sample (A. P. Wolfe) [1997]

The diatom concentration of a uniform lake sediment sample was estimated...

Concentric {F}

French. concentrer. From In combination. Latin. con – together, centrum – point.

Defined groups of coarse features, one within another.

Example:

Synopsis of the British Diatomaceae by W. Smith.

(*Cocconeis scutellum*)

...orbicular or elliptical; striae concentric with extremities...

Concentric Spaces {F}

In combination. Latin. con – together, centrum – point plus French espace.

The plain hyaline area between features (cells) that form a concentric ring.

See also Concentric. Compare with Radial Spaces (Rays)

Example:

Arachnoidiscus by N.E. Brown.

(*Arachnoidiscus Ehrenbergii*)

Concentric spaces from half as broad to as broad as the cells are long; radial spaces much narrower.

Concordant distribution pattern {P}

Congruence in the distributional tracks or ranges of species (or higher taxa), but can also refer to congruence in areas of maximum abundance of taxa. Widely used in open ocean biogeographic studies for determination of major ecosystem-assemblage areas, this approach, under the name generalized track, is the starting point of the vicariance biogeographer.

Example:

Conductivity {P}

Latin. conductus

A measure of the dissolved ion concentration in the aqueous medium being tested.
Example:

Confluence {Hy}

In combination. Latin. con - together. Latin fluxum - to flow.

The flowing together of two or more streams; the place where a tributary joins the main stream.

Example:

Artificial-substratum periphyton and water quality in the lower La Trobe River, Victoria (B. C. Chessman) [1985] Downstream of the Morwell River confluence, diatom assemblages were influenced by a sharp increase in dissolved solids concentration.

Confluent {F}

In combination. Latin. con - together. Latin fluxum - to flow.

Running into each other, almost overlapping.

Example:

The Diatomaceae of Philadelphia and Vicinity by C.S. Boyer.

(Fragilaria Harrisonii)

...striae robust, radiating in the middle, composed of confluent puncti, larger at the circumference.

Confused {F}

In combination. Latin. con - together. Latin fundere(fusum) - to pour..

Disordered. Mixed together with no clear regular plan.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck. (Rhizosolenia robusta)

...imbrication confused, mucrones small...

Congeneric {P}

Latin. con - with, plus Latin. genus - kind.

Species of the same genus.

Example:

Eunotia spp. (Bacillariophyceae) from Middle Eocene lake sediments and comments on the origin of the diatom raphe (P. A. Siver) [2011]

These fossil diatoms have pronounced affinities with modern congeneric taxa...

Conical {F}

Greek conos - a cone.

Having a cone shape.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour. (Rhizosolenia alata)

Valves more or less conical, truncated, without terminal spine;...

Coniform {F}{G}

Greek. konos.

In the form of a cone.

Example:

Diatoms from Russian Deposits by J.W. Barker & S.H. Meakin.

(*Aulacodiscus archangelskianus*)

...and the shape of the processes, which are long, coniform, and much broader at the base...

Conjugate, Conjugation {P}

In conjunction. Latin. con – together, jugare – to yoke.

Example:

Notes on Diatoms by F.B. Taylor

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Connecting Bands {F}

Latin. con-necter;nexum - to tie. plus Middle English. band.

The ring or hairpin shaped (in top view) elements, which with the valve or mantle as it is sometimes called, gives the appearance of bands when viewed from the side. See Also Girdle Bands.

Example:

A Treatise on the British Freshwater Algae

by G.S. West & F.E. Fritsch.

...attached to a connecting band in the form of a closed or open hoop with overlapping edges;...

Connecting Membrane {F}

Latin. con-necter;nexum - to tie. plus Latin. membrana.

The hyaline area that joins rays in a centric form. These areas take on the appearance of a web between two toes of a ducks foot.

Example:

Arachnoidiscus by N.E. Brown.

(*Arachnoidiscus oamaruensis*)

...they are prominent and girder-like for all their length, but are without a connecting membrane at the centre.

Connecting Zone {F}

Latin. con-necter;nexum - to tie. plus Greek. zone - a girdle. The area about the margin of the valve where it attaches to the girdle bands.

Example:

H.M.S. Challenger - Report on the Diatomaceae

(*Plagiogramma thaitiense*)

...the striae, which appear on the connecting zone, are continued to the angles.

Connivent {F}{G}

In combination. Latin. con. Latin. connivere - to wink.

Having a tendency to converge.

Example:

British Diatomaceae by Arthur Scott Donkin.

(*Navicula fusca*)

...striae connivent, very coarse and granular...

Connoted {F}

In combination. Latin. con –together, Latin. notare - to mark.

In most cases used to imply an attribute. To include.

Example:

Notes on Diatoms by F.B. Taylor

89 - ...when actual perforation of the membrane is connoted.

Conservative property {P}{O}

Latin. con – together, servare – to keep and Latin. proprius to own

Characteristics of seawater that are nearly constant, changing only very slowly, such as salinity, density, refractive index and osmotic pressure (cf nonconservative property).

Essentially they change only at the interface between ocean and atmosphere (evaporation, rainfall, etc), or land and sea (freshwater runoff, etc).

Example:

Conspecific {P}

In combination. Latin. con – together plus Latin. species - kind

Applied to individuals or populations of the same species; (cf heterospecific).

Example:

Examination of diatom type material: *Nitzschia delicatissima* Cleve, *Thalassiosira minuscula* Krasske, and *Cyclotella nana* Hustedt (G. R. Hasle) [1976] *Nitzschia actydropihila* Hasle and *Thalassiosira monoporo-cyclus* Hasle are rejected as separate species, the first being conspecific with *N. delicatissima* and the second with *T. minuscula*.

Conspicuous {F}

In combination. Latin. con - together. Latin. specere - to look.

Easily seen.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.
(*Navicula Cluthensis*)

Striae conspicuous, clear and sharp...

Constricted, Constriction {G}

Latin. constringere - to press.

A narrowing of the frustule outline at some point along its length. May also be used in relation to other features.

Example:

Pritchard's Infusoria (*Gomphonema capitatum*)

...cuneiform-shaped lorica, laterally constricted near the rounded end.

Constricted-dagger {F}

Latin. constringere - to press.plus Middle English. dagger.

The frustule resembles a very thin bladed paper knife.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
(*Pseudo-synedra* genus)

...in the form of a "constricted-dagger"...

Consumers {P}

Latin. consumere - to destroy or take.

See heterotrophic.

Example:

Variation in per capita interaction strength: Thresholds due to nonlinear dynamics and nonequilibrium conditions (J. L. Ruesink) [1998]

Two alternative states arise for diatoms, in which they may be limited by consumers at low diatom abundances...

Continental borderland {O}

A submarine plateau or irregular area adjacent to a continent, with depths greatly exceeding those on the continental shelf, but not as great as in the deep oceans.

Example:

Diatoms and Silicoflagellates From Holocene Sediments, Southern California Continental Borderland (R. G. Arends) [1980]

Samples from five basins on the southern California continental borderland were examined for diatoms and silicoflagellates.

Continental island {H}

In combination. Latin. con - together plus tenere - to hold, and Middle English. island.

An island that is geologically related to a continent and was formerly connected to the continent, allowing floral and faunal interchange until the time of disjunction.

Example:

MADAGASCAR: Heads It's a Continent, Tails It's an Island (M. J. Wit) [2003]

"In Madagascar we have a continental island of the first rank..."

Continental margin {H}

In combination. Latin. con - together plus tenere - to hold, and Latin. marginis.

Nearshore ocean zone that consists of the shoreline, shelf, slope and rise.

Underlain by continental or sialic crust.

Example: No evidence for a Pleistocene collapse of the West Antarctic Ice Sheet from continental margin sediments recovered in the Amundsen Sea (C. D. Hillenbrand) [2002]
...deposition of a nearly pure foraminiferal or diatom ooze may have occurred on the continental margin due to limited input of lithogenic detritus...

Continental platform {O}

The zone that includes both the continental shelf or continental borderland and the continental slope.

Example:

The Potential Value of Several Recent American Coastal and Inland Deposits as Future Source Beds of Petroleum (Parker D. Trask)

...to be rich in diatoms during certain parts of the year, samples of sandy silt, taken near the edge of the

continental platform.

Continental rise {H}

In combination. Latin. con – together plus tenere – to hold, and Old English. r isen

An area of gently sloping ocean floor (slope of usually less than half a degree or 1:100) at the base of the continental slope.

Example:

Are Antarctic Peninsula Ice Sheet grounding events manifest in sedimentary cycles on the adjacent continental rise? (P. J. Bart) [2007]

The comparison shows that more sedimentary cycles are evident on the continental rise for three of the four diatom biozones we considered.

Continental shelf {H}{O}

In combination. Latin. con – together plus tenere – to hold, and Old English. scylf – a ledge

The ocean floor adjacent to the shoreline (average slope typically very gradual, 10' or less, or 1:1,000). This zone extends from the line of permanent immersion to the shelf break (usually about 100 -120 m depth).

Example:

Conversion of diatoms to clays during early diagenesis in tropical, continental shelf muds (P. Michalopoulos) [2000]
Parts of the Amazon continental shelf are characterized by high primary production rates in the water column attributed for the most part to diatoms.

Continental Shelf Break {O}

Boundary zone between the continental shelf and slope.

Example:

Diatom numbers around the continental shelf break (M. Funayama) [2001]

On the other hand, in the open sea around the continental shelf break, there were few diatoms in any season.

Continental slope {H}{O}

In combination. Latin. con – together plus tenere – to hold, and Old English. aslopen – slip away

The ocean floor extending from the shelf break (at the seaward edge of the continental shelf) to the continental rise (where present) or to abyssal depths where absent (average slope about 0.40 or 7:100).

Example:

Late Quaternary History of Continental Climate and the Benguela Current off South West Africa (L. Diester-Haass) [1988]

Late Quaternary Sediments from the southwest African Continental slope were analyzed for their coarse fraction, diatom and clay mineral content...

Contracted {F}

In combination. Latin. con - together. Latin. tractum - to draw.

This can mean two things. Firstly it may refer to a feature being shorter than one would expect or secondly it may mean that a number of features that are normally wider spaced appear to be drawn together.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.

(*Navicula brevis*)

...broad, short; contracted to short, produced, obtuse extremities.

Contractile Vacuole {P}

In combination. Latin. con - together. Latin. tractum - to draw. and Latin. vacuus - empty.

An organelle that periodically expands by filling with fluid and then contracts as the fluid is expelled.

Example:

Freshwater Algae -their Microscopic World Explored

by H. Canter-Lund & J.W.G. Lund

pg134

Diatoms of the British Coastal Waters by N. I. Hendey

p.4 *Nitzschia hantzschiana*

Contrary {F}

In combination. Latin. contra - opposite. Latin. stare - to stand.

Opposite.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.

(*Pleurosigma naviculaceum*)

...apices sometimes very slightly turned in contrary directions.

Convection {Hy}{O}{P}

Latin. convectio - bring together.

(1) The process whereby heat is carried along with the flowing groundwater (after Freeze and Cherry, 1979).

(2) Fluid motion which results from the action of unbalanced buoyancy forces.

(3) Vertical circulation within a fluid resulting from density differences caused by temperature variation or (in the oceans) salinity variation.

Example:

Convection in ice-covered lakes: effects on algal

suspension (D. E. Kelley) [1997]

It will be argued here that convective mixing is important to this bloom since it can facilitate growth by suspending the diatoms near the surface.

Convex {G}

Latin. convexus - to carry.

Curves outward apex to apex (bulges)

Example:

Diatoms of British Coastal Plankton by J. B. Sykes.

Valves slightly convex, with areolae in curved lines.

Copulae (pl.), Copula (sing.) {F}

Latin. copulo - to couple, bind, or tie together, connect, unite. Also copulatus -

joined together, united, connected.

A term sometimes used to refer to a girdle band, but actually referring to the element that sits between the valve itself and the girdle band. In general these refer to the same thing a girdle bands and intercalary bands.

Example:

New observations on frustule morphology of *Eupodiscus radiatus* Bailey and *Fryxelliella floridana* Prasad (L. F. Fernandez) [2003]

The valvocopula of *F. floridana* is open and its copula is ligulate.

Coral {O}

Simple marine animals that live symbiotically with algae. In the symbiotic relationship, the algae provides the coral with nutrients, while the coral provide the algae with a structure to live in. Coral animals secrete calcium carbonate to produce a hard external skeleton.

Example:

A taxonomic survey of the diatoms associated with Florida Keys Coral reefs (W. I. Miller) [1977]

The coral was characterized by species of *Campylodiscus*, *Podocystis*, and *Triceratium*; the coral sand by *Amphora* and *Diploneis*, and the *Thalassia* by *Mastogloia*.

Coral Bleaching {O}

Situation where coral lose their colorful symbiotic algae. Thought to be caused by unusually warm water, changes in salinity of ocean seawater, or excessive exposure to ultraviolet radiation.

Example:

Coral Reef {O}

Ridge of limestone found generally below the ocean surface. This marine feature is produced by numerous colonies of tiny coral animals, called polyps, that create calcium carbonate structures around themselves for protection. When the corals die, their vacant exterior skeletons form layers that cause the reef to grow. Coral reefs are found in the coastal zones of warm tropical and subtropical oceans.

Example:

Benthic diatom community composition in three regions of the Great Barrier Reef, Australia (S. Gottschalk) [2007] Despite their ecological importance, very little is known about the taxonomy and ecology of benthic diatoms in coral-reef ecosystems.

Cordate {F}

Latin. cordis - the heart.

Heart Shaped.

Example:

Morphology and taxonomic position of the Late Cretaceous diatom genus *Pomphodiscus* (Vladimir A. Nikolaev) [2000] Valves approximately circular...weakly convex, with a small concavity around a circular or cordate central dome, with an ovoid central depression

Cordiform {F}

Latin. cordis - the heart.

Heart Shaped.

Example:

New Species of Fossil or Pelagic Marine Diatoms
by J. Brun. Trans. J. W. Barker.

(*Corethron cometa*)

...furnished on one side with long and strong awns
(fronds), cordiform at their base,...

Core method {P}{O}

From Latin. cor – the heart and Greek. meta – after plus hodos – a way

Technique for analyzing a region where a water mass property reaches a maximum or minimum value within a wedge- or tongue-shaped distribution. Because of mixing the core gradually weakens in intensity (difference from surrounding waters) as it spreads with distance from the source. By backtracking along the core the source area or zone may be located.

Example:

Core sample {Hy}

From Latin. cor – the heart and Middle English – essample.

A sample of rock, soil, or other material obtained by driving a hollow tube into the undisturbed medium and withdrawing it with its contained sample.

Example:

Diatoms from the southwestern continental slope, South China Sea (M. Suna) [2009]

...diatom species and the main thermophilic, warm-water and coastal diatom species, the core sample can be divided from bottom to top into three diatom zones.

Coriolis effect {P}

The tendency for any moving body of water to drift sideways from its logical course due to the rotation of the earth.

Example:

Correlation {P}

Latin. cor - with, Latin. relatus - to bring back.

Stratigraphy: discovery of similarities in lithography and/or fossil content that results in assignment of different rock formations or portions thereof to the same time interval.

Example:

Cornua {F}

Latin. cornutus - a horn.

A horn. See also Awn.

Example:

H.M.S. Challenger - Report on the Diatomaceae
(*Chaetoceros curvatum*)

This isolated frustule possesses four awns or cornua, originating from the centre...

Cornutate {F}

Latin. cornutus - a horn.

Horned. Bearing a horn. See Cornua.

Example:

Miocene and Pliocene Diatoms by W. W. Wornardt
(Triceratium genus)

The angles are furnished with a stout cornutate process.

Corona {F}

Latin. corona - a crown.

A circular or nearly circular rim or flange of thickened silica. Also used to describe a feature of radiating lines.

Example:

H.M.S. Challenger - Report on the Diatomaceae (Surirella multicostata)

It is distinguished by the possession of a corona of very numerous canaliculi...

Coronate {F}

Latin. corona - a crown.

Having or likened to a corona.

Example:

H.M.S. Challenger - Report on the Diatomaceae.
(Stictodiscus genus)

...and these groups may be indicated as coronate or non-coronate...

Coronet {F}

Latin. - corona.

A small crown.

Example:

Simbirsk Diatoms by Otto N. Witt.
(Trinacria Weissflogii)

...a triangular strong coronet of bristles...

Corpuscles {F}

Latin. corpus - the body.

A minute particle. Note: this reference is unlikely to be to a diatom.

Example:

Pritchard's Infusoria
(Odontella unidentata)

The one-toothed Odontella has oval binary corpuscles, often irregular;...

Corymbiform {F}

Greek. korymbos - a cluster.

In the example below, this word has been attributed the meaning 'boat-shaped'. This, however, I believe is a mistake as the dictionary definition is at odds with this interpretation. i.e. corymb - a flattish-topped raceme; where a raceme is an indefinite inflorescence e.g. flowers on an unbranched stalk.

Example:

Phytoplankton by A.D. Boney

Linear diatoms may be boat-shaped (corymbiform)...

Cosmopolitan {P}

Greek. kosmos - world, universe.

Distribution of an organism that is worldwide or pandemic. Applied to oceanic species that are warmwater species (qv) and found throughout most of all three warmwater oceans.

Widely diffused over the globe, found in many locations

Example:

Diatoms in Eastern Australia by Neils Foged.

(*Diploneis litoralis*)

Polhalobous, cosmopolitan.

Costae (pl.), Costa (sing.) {F}

Latin. costa - a rib, a side, a wall.

Siliceous thickenings in the valve. Usually appearing as double lines. Most often appearing towards the margins. Sometimes ribs.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.

(*Pinnularia rostellata*)

Costae strong, subdistant, inclined near the ends...

Costate {F}

Latin. costa - a rib, a side, a wall.

Bearing Costae or Rib-like. See Also Costiform.

See Dimidiate Striate. See also Costae. Sometimes used to describe a frustule bearing costa. Sometimes used as Dimidiate Striate.

Example:

Synopsis of the British Diatomaceae by W. Smith.

(*Amphora costata*)

Valve longitudinally costate, costae marked with a double line of moniliform puncta...

Costal Lines {F}

Latin. costa - a rib, a side, a wall. plus Latin. linea.

Formed from a series of adjacent costa. See Costa.

Example:

Marine Diatoms of the Philippine Islands by A. Mann

(*Achnanthes tenuistauros*)

...under valve with markings of double rows of beading with separating costal lines, strongly radiating;...

Costiform {F}

Latin. costa - a rib, a side, a wall.

Rib-like. See Costate.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.

(*Amphora turgida*)

...indistinctly punctate, or with costiform striae...

Costules {F}

Latin. costa - a rib, a side, a wall.

Small costae. See Costae.

Example:

H.M.S. Challenger - Report on the Diatomaceae (*Terebraria* sp.)

...it is to be noted that the granules or costules which are seen in profile differ greatly in number...

Coterminous (Conterminus) {P}

Latin. conterminus - neighbouring.

Applied to organisms with overlapping or quite similar distributions. Also applied to like processes and even landmasses.

Example:

(1) *The Fluorescent Colors of Plants* [F. E. Lloyd] [1924]
In these it is coterminous with the chlorophyll and with the limits of the chloroplast.

(2) *Investigation of a Diatom Population from Mine Tailings in Nye County, Nevada, USA* (S. L. VanLandingham) [1968]

The mine tailings population was very similar to some Quaternary diatom assemblages in the vicinity and in other parts of the conterminous United States.

Countercurrent {O}

A current flowing adjacent to another current both in the opposite direction.

Example:

A Note on the Phytoplankton Distribution in the Offshore Water of the Eastern and Central Gulf of Mexico (E. M. Hulburt)

Other instances include brief blooms at Bermuda in spring (Hulburt, Ryther and Guillard, 1960; Hulburt and Rodman, 1963) and at 35°N and 48°W (Riley, 1957) and an occurrence of diatoms in a countercurrent associated with the Guiana Current off the coast of Brazil.

-colous, -coulous {H}

Latin. colere - to inhabit.

Suffix, meaning "to inhabit", eg cavernicolous, monticolous, piscicolous, etc.

Example:

Crash {E}

A sudden population dropoff caused by resource depletion. See Dieback.

Example:

Interactions Between the Diatom Thallasiosira pseudonanna and an Associated Pseudomonad in a Mariculture System (K. H. Baker) (1978)

...healthy cultures of the diatom become moribund and a significant number die within a 1- to 2-day period. This phenomenon, which we term an algal crash...

Crateriform {G}{F}

Latin: Greek. Krater - a mixing bowl.

Cup-shaped. (See Craticular and Dissepiment)

Example:

The Modern Conception of the Structure and Classification of Diatoms (C. E. Bessey) [1900]

...bearing one to forty-five sub-marginal nipple-like processes, flat, crateriform, or with an elevated zone; markings granular, in straight or crooked lines.

Craticular {G}{F}

Latin:Greek. Krater - a mixing bowl.

Cup-shaped. (see also Dissepiment) Also thick silica bars that are normally cup or mug-shaped though not necessarily formed like a cup.

Example:

(1) Marine Diatoms of the Philippine Islands by A. Mann (Stictodesmis australis)

...one beneath each valve, similar to the craticular plates of such diatoms as Navicula cuspidata...

Note:- Craticular frustules is also a term given to abnormal frustules - frustules in a Craticular State.

(2) A Treatise on the British Freshwater Algae by G.S. West & F.E. Fritsch.

...the valves being abnormal in shape and in other respects. Such a craticular state, which has been interpreted as a resting condition...

Crecentric (Crescentic) {G}

Latin. crescere - to grow.

Valve crescent shaped when in valve view

Example:

The Morphology of the Diatom Frustule

by H.G. Barber & E.Y. Haworth (Amphora)

Valves semicircular, semilanceolate or crescentic...

Creek {Hy}

A small stream of water which serves as the natural drainage course for a drainage basin of nominal, or small size. The term is a relative one as to size, some creeks in the humid section would be called rivers if they occurred in the arid portion.

Example:

The Application of Diatom Indices in the Upper Porsuk Creek Kütahya - Turkey (Cüneyt Nadir Solak) [2010]

Changes in the diatom indices at three sampling sites along the creek...

Crena(e) {F}

Latin. crena - a notch.

A notch or tooth.

Example:

The Diatomaceae of Philadelphia and Vicinity

by C.S. Boyer.

(Eunotia robusta)

Valve arcuate, with several or numerous dorsal ridges or crenae which decrease in relative size in proportion to their number.

Crenad, Crenophilus {P}

Spring loving.

Example:

Crenate {F}

Latin. crena - a notch.

Having notches or teeth or likened to a notch or a tooth.

Example:

Biddulphoid Diatoms. II: The Morphology and Systematics of the Pseudocellate Species, *Biddulphia biddulphiana* (Smith) Boyer, *B. alternans* (Bailey) Van Heurck, and *Trigonium arcticum* (Brightwell) Cleve (M. A. Hoban) [1983] Valve mantles vertical to concave, sometimes deeply crenate. Valve margins sometime with a terminal thickening.

Crenium {H}

Pertaining to a community associated with spring water.

Example:

Crenulate (Crenelate) {G}

Latin. crena - a notch.

A cross between waved and serrated. Smooth contours in the trough of the wave but with a pointed crest.

Example:

New Species of Fossil or Pelagic Marine Diatoms by J. Brun. Trans. J. W. Barker. (*Cotyledon circularis*)

Crest very elevated and crenulated; from it to the centre some radiating striae...

Crepuscular {P}

Latin. crepusculum - dusky.

Twilight; organisms active at dawn and dusk; also applied to events which take place and/or with maximum rates during dawn and dusk (cf diurnal, nocturnal).

Example:

Crescent-shaped {F}

Latin. crescere - to grow.

Shaped like the crescent of the moon.

Example:

Pritchard's Infusoria (*Synedra bilunaris*)

...resembles two lunate or crescent-shaped bodies attached end to end.

Crest {F}

Old French. creste.

An elevated ridge like that of a roof.

Example:

Diatoms from the West Indian Archipelago by P.T. Cleve.

(*Rhoicosigma Antillarum*)

...very elevated on the one half of the valve, where it forms a crest, impressed on the other half.

Cretaceous {H}{O}

Latin. cretaceous (creta) - chalk.

The final period of the Mesozoic Era of the geologic time scale; dating between 135 and 65 million years ago.

Example:

Fossils by Richard Moody
from the Cretaceous deposits of North America and fossil
forests...

Cribra {F}

Latin. cribrum - a sieve.

Finely poroid siliceous membranes, including punctae.

Example:

Morphology and variation of the diatom *Aulacodiscus*
Margaritaceus (D. U. H. Becerril) [1994]

The general morphology is consistent with earlier
descriptions: the valve presents fairly coarse, loculate
areolae closed by cribra on the outside and open to the
inside by large foramina.

Cribriform {F}

Latin. cribellum - a sieve.

Perforated.

Example:

Notes on Diatoms by F.B. Taylor

100 - ...writing of this median cribriform plate...

Critical depth {P}{O}{Hy}

Greek. kritikos - to judge and Old Norse - dyph.

Limnology: The depth, determined by measurements, at which total (integrated)
photosynthesis is equal to total (integrated) respiration rate for the reference population
of phytoplankton. Also called critical level (cf. compensation depth).

Example:

Crook {F}

Old Norse. krokr.

This refers to the shape of the head of a shepherd's or bishop's crook.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.

(*Navicula Iridis*)

Raphe with median apices curved like a crook, in opposite
directions...

Cross-sectional area {Hy}

Area perpendicular to the direction of flow.

Example:

Crown {F}

Latin. corona.

At the highest point of a feature. Also a circular ornamentation.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(*Actinocyclus Ralfsii*)

Large transparent marginal "eye" and a crown of far-apart
spinulae.

Cruciform {G}

Latin. crux - a cross.

Having four arms. In the shape of a cross.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
(*Omphalopsis Australis*)
Valve cruciform, with apices rounded...

Cryology {Hy}

The science of the physical aspects of snow, ice, hail, and sleet and other forms of water produced by temperatures below Zero degrees Celsius.

Example:

Coastal permafrost landscape development since the Late Pleistocene in the western Laptev Sea, Siberia (M. Winterfeld et al) [2011]
Analyses included lithological and cryological core descriptions...

Cryopelagic {H}

Greek. kryos - frost,

Pelagic organisms limited to arctic and/or antarctic (polar) waters, not occurring in intervening temperate or tropical waters.

Example:

Differences in taxonomic composition of summer phytoplankton in two fjords of West Spitsbergen, Svalbard (J. Wiktor) [2005]
In Hornsund, the most typical taxa were cryopelagic diatoms, like *Bacteriosira*.

Cryoplankton {P}

Greek. kryos - frost,

Pertaining to cryopelagic plankton.

Example:

Ecology of sea ice biota (R. Horner) [1992]
Cryoplankton develop and form communities in and around ice in summer.

Cubic foot per second (ft³/s, or cfs) {Hy}

Rate of water discharge representing a volume of 1 cubic foot passing a given point during 1 second, equivalent to approximately 7.48 gallons per second or 448.8 gallons per minute or 0.02832 cubic meter per second.

Example:

Cubical {F}

Greek. kybos - a die.

Having six equal square faces, as in a die.

Example:

Report on the Irish Diatomaceae by E. O'Meara.
(*Amphitetras*)
Frustules concatenate; cubical; processes springing...

Cultural eutrophication {P}

General term for increase in nutrients in aquatic or marine ecosystems due to human activities.

Example:

Paleolimnological analyses of cultural eutrophication patterns in British Columbia lakes (E. D. Reavie) [2000] Nonetheless, earlier studies provided important floristic information on diatom species changes as a result of presumed cultural eutrophication.

Culture {P}

Latin. cultura

An organism in the state of cultivation.

Example:

A Culture Method for Marine Diatoms and Flagellates (B. Wisely)

There is a Considerable literature on the culture of the smaller marine algae (diatoms and flagellates).

Cuneate {G}

Latin. cuneus - a wedge.

Wedge Shaped.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
(Podocystis adriatica)

Valve cuneate, sometimes attenuate near the base,...

Cuneiform {F}

Latin. cuneus - a wedge.

Having a wedge shape.

Example:

British Diatomaceae by Arthur Scott Donkin.

(*Navicula aspera*)

...striae oblique, distinct, and granular, 20 in .001", reaching to the median line, much shortened (so as to form a narrow, linear, marginal band, and to leave a cuneiform space) opposite the central nodule....

Current {O}

A horizontal movement of water in a well-defined, established pattern, as in a river or stream. The movement of a definite body of air in a certain direction.

Example:

Effects of Current and Conditions Simulating Autogenically Changing Microhabitats on Benthic Diatom Immigration (R. J. Stevenson) [1983]

Diatom immigration rates were affected by changes in current patterns similar to those...

Curve-Lines {F}

Latin. curvus -crooked. plus Latin. linea.

The name given to the lines that delineate axial segments on a valve. Imagine a peeled orange viewed from the side. The lines between the segments are what are being described with this term.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.
(*Amphora sulcata*)

In another focus, the lateral segments and their curve-

lines disappear.

Cushion-shaped {F}{G}

Latin. culcitta - mattress or cushion. plus Old Norse. skapa.

A term sometimes used to describe a frustule when in Girdle View. See also Pillow-shaped.

Example:

Diatoms of British Coastal Plankton by J. B. Sykes.

Cell cushion- or pillow-shaped, with extended corners;...

Cusplate Foreland {O}

Is a triangular accumulation of sand and/or gravel located along the coastline. This feature is formed by the joining of two.

Example:

Cuspidate {F}

Latin. cuspis - a point.

Having a rigid point.

Example:

Report on the Irish Diatomaceae by E. O'Meara.

(*Navicula cuspidata*)

Valve large, lanceolate; ends cuspidate...

Cycloidal {F}{G}

Greek. kyklos - circle.

A figure like a circle.

Example: Simbirsk Diatoms by Otto N. Witt.

(*Aulacodiscus probabalis*)

Characteristics of this form are rows of dots placed in cycloidal lines between which...

Cyclomorphosis {P}

Cyclical changes in form such as seasonal changes in morphology.

Example:

...only a few phytoplankton undergo seasonal polymorphism or cyclomorphosis...

Cylindrical, Cyliindroid(al) (G)

Greek. kylin-dros - to roll.

Simple a circular tube, more geometrically - a circle perpendicular to the axis - giving a right circular cylinder)

Example:

Diatoms of British Coastal Plankton by J. B. Sykes.

Cells with a long cylindrical portion, tapering only near each end...

Cymbelloid {G}

Latin. cymbalum - the hollow of a vessel.

Shaped as the hull of a boat. Viewed from the side.

Example:

The Morphology of the Diatom Frustule by H.G. Barber & E.Y. Haworth (*Cymbellonitzschia*)

Valve semicircular, cymbelloid, isopolar...

Cymbiform {G}

Latin. cymbalum - the hollow of a vessel.

Margins unequally curved in opposite directions. As in many *Cymbella*, *Epithenia*. See Cymbelloid.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(*Amphora* genus)

Valves cymbiform, with central nodule...

Cymbelliform, Cymbellaeform {G}

Greek. cumbalon - a hollow basin/or/cymbe - a boat

See Cymbelloid.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(*Campylosira* genus)

Valve cymbelliform, with rostrate apices,...

Cyst {F}

Greek. kystis - a bladder

A bladder or bag-like structure.

Example:

Freshwater Algae - Their Microscopic World Explored
by H. Canter-Lund & J.W.G. Lund.

Cytoblast {P}

In combination. Greek. kyto - a vessel, hollow.

An older term for Nucleus.

Example:

Synopsis of the British Diatomaceae by W. Smith.
...being aggregated in a narrow line or ring around a circular space occupied by a transparent vesicle, the nucleus or cytoblast of the cell.

Cytokinesis {P}{E}

In combination. Greek. kyto - a vessel, hollow. Greek. kinesis - movement.

The process of cytoplasmic division and not including nuclear division.

Example:

The Plant Cell by William A. Jensen.

The second process - cytokinesis or cytoplasmic division - involves the division of the cell so that each half receives one nucleus.

Cytoplasm {P}{E}

In combination. Greek. kyto - a vessel, hollow. Greek. plasma - a thing moulded.

A part of the protoplasm, beyond the nucleus that contains other membrane-bound organelles.

Example:

The Plant Cell by William A. Jensen.

The nucleus, chloroplasts, mitochondria, and other particulate parts of the cell are in the cytoplasm, which is separated from the wall on one side...

D

Dam {Hy}

Any artificial barrier which impounds or diverts water. The dam is generally hydrologically significant if it is: (1) 25 feet or more in height from the natural bed of the stream and has a storage of at least 15 acre-feet. (2) or has an impounding capacity of 50 acre-feet or more and is at least six feet above the natural bed of the stream.

Example:

Response of epiphytic diatom communities from the tailwaters of Glen Canyon Dam, Arizona, to elevated water temperature (D. W. Blinn) [1989]

The composition of epiphytic diatom communities from the cold tailwaters (12°C) of Glen Canyon Dam, Arizona, was analysed...

Dash Stigma {F}

Greek. stigma(tos) - tattoo-mark, brand.

Perforation through valve face whose external opening is dash (-) shaped and whose internal opening is slit-like.

Example:

The Morphology of the Diatom Frustule by H.G. Barber & E.Y. Haworth Comma or dash stigma on one side of the central area.

Date box {F}

Example:

A Beginner's Guide to Freshwater Algae by H. Belcher & E. Swale.

The shell or frustule is like a box, formed of 2 overlapping glassy portions as in a Petri dish or a date box.

Daughter-cell {P}

Old English. dohtor.

The smaller of two frustules after self-division.

Example:

Littoral Diatoms of Chichester Harbour by N. Ingram Henney.

...new valves for the daughter-cells must conform more or less to the pattern of the parent-cell.

Report on the Irish Diatomaceae by E. O'Meara.

(*Orthosira Dickieii*)

One portion of the plasm being too small to develop itself into a daughter-cell.

Deciduous {F}{P}

Latin. De – from, calcere – to fall

Usually taken to refer to a structure which is easily shed or removed – as in leaves of a tree. With reference to diatoms though it may refer to spines and such structures it is more often used to describe the position of a structure in relation to another structure,

that is a feature which is 'falling away' from an adjacent feature.

Example:

Diatoms in Eastern Australia by Neils Foged.
(*Eunotia ballinaensia*)

The dorsal margin is almost parallel with the ventral margin and deciduous close to the rounded faintly reflexed apices.

Decussate (Decussating) {F}

Latin. decussis - a coin of ten asses (X)

Meaning to cross, as in X.

Example:

Marine Diatoms of the Philippine Islands by A. Mann
(*Nitzschia obesa*)

N. obesa is said to have fine decussating rows of beading, and although a decussating order is not evident...

Deep scattering layer (DSL) {O}

Layer of organisms that move away from the surface at night; the layer scatters or returns vertically directed sound pulses

Example:

Organisms within the deep scattering layer undertake a daily migration to hide in deep

Deepwater habitat {Hy}

Permanently flooded lands lying below the deepwater boundary of wetlands.

Example:

Benthic Algae of Lake Erie (1865-2006): A Review of Assemblage Composition, Ecology, and Causes and Consequences of Changing Abundance (T. W. Stewart) [2008]
Subsequent indicators of oligotrophication included declining *Cladophora* abundance, and increased diatom abundance in deepwater habitat.

Deepwater mass {P}

A water mass typically formed in boreal or austral subarctic or subantarctic seas by cooling of relatively salty water at the surface. Occurs at depths between intermediate and bottom water. For example, North Atlantic Deep Water.

Example:

Phosphorus Reservoirs in the St. Lawrence Upper Estuary (M. Lucotte) [2011]

...the deepwater mass is fairly constant all year round, the rate of...

Definite {F}

In combination. Latin. de - to. Latin. finis - a limit.

Having distinct limits, clear. Also used to describe a frustule in the process of self-division where a septum (or diaphragm) is formed on each of the younger valves. See also Indefinite.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.
(*Navicula brevis*)

Central nodule indefinite; terminal nodules definite.

Delta {H}{Hy}

Greek. also Hewbrew - daleth - a tent door.

Region at the mouth of a river where sediments are deposited resulting in a buildup of the land structure because of sedimentation rate and local conditions.

Example:

Diatom algae form an important part of the Okavango Delta ecosystem.

Demersal {P}{H}

Species that live near the bottom of the water body.

Example:

Diatoms as food source indicator for some Antarctic Cumacea and Tanaidacea (M. Blazewicz-Paszkwycz) [2002] ...recognized as a component of the diet of demersal fishes.

Demi-circle {F}

Example:

A Treatise on the Diatomaceae by Henri van Heurck.

(*Cyclotella striata*)

...a demi-circle of coarse puncta.

Dendriform

Greek. dendron - a tree.

Tree-like. Branched.

Example:

Biology of the Algae by F.E. Round

(*Didymosphaenia geminata*)

Four other types of perforation are illustrated...and dendriform...

Dendrites {F}

Thin branch-like growth (as of ice on the water surface.)

Example:

Plasticity and robustness of pattern formation in the

model diatom *Phaeodactylum tricorutum* (M. Vartanian)

[2009]

...were proposed to explain the formation of the dendrite-like structures often observed in both centric and pennate diatoms.

Dendritic {Hy}{P}{F}

The form of the drainage pattern of a stream and its tributaries when it follows a treelike shape, with the main trunk, branches, and twigs corresponding to the main stream, tributaries, and subtributaries, respectively, of the stream.

Example:

(1) The Formation and Maintenance of Benthic Diatom Communities (R. Patrick) [1976]

...we rarely find these diatoms forming their upright dendritic colonies.

(2) Taxonomy, phylogeny, and paleoecology of *Eoseira wilsonii* gen. et sp. nov., a Middle Eocene diatom (Bacillariophyceae: Aulacoseiraceae) from lake sediments at Horsefly, British Columbia, Canada (A. P. Wolfe) [2005] *A. lirata* cruciform to dendritic linking spines...

(3) Stream hydrology: an introduction for ecologists (Nancy D. Gordon) [2004]

The patterns in the Acheron River drainage are mainly dendritic.

Density {P}

Latin. densus - thick.

Population standing stock standardized by unit area or unit volume.

Example:

The Formation and Maintenance of Benthic Diatom Communities (R. Patrick) [1976]

...we rarely find these diatoms forming their upright dendritic colonies.

Density current {P}{E}{Hy}

Latin. densus - thick.

Current produced by differences in density - usually a thermohaline current - where denser water sinks and less dense water rises to replace it.

Example:

Phytoplankton Ecology of the San Francisco Bay System: The Status of our Current Understanding (J. E. Cloern) [1979]

As marine diatoms enter San Pablo Bay in the bottom density current, they encounter the opposing current from the Sacramento-San Joaquin rivers.

Density-dependent {P}

Latin. densus - thick.

Factor affecting population density varying with population size, ie proportion of individuals affected by factor is a function of population size.

Example:

Species interactions within a fouling diatom community: Roles of nutrients, initial inoculum and competitive strategies (S. Mitbavkar) [2007]

...have reported similar benthic diatom succession through density-dependent competitive interactions for nutrient and light.

Density-independent {P}

Latin. densus - thick.

Factor affecting population size not varying with population density but operating on a constant proportion of individuals, irrespective of population size.

Example:

The Formation and Maintenance of Benthic Diatom Communities (R. Patrick) [1976]

Often the most important factors are those composing the density-independent environment in which the diatom

community lives.

Dentate {F}

Latin. dentatus - toothed; having teeth.

Toothed. Short spines possibly.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.

(*Syndetocystis* genus)

Valves suborbicular, with dentate margins;...

Dentations {F}

Latin. dentis - a tooth.

See note under.

Example:

Pritchard's Infusoria

(*Eunotia diadon*)

...the only difference being in the number of undulations or dentations on the dorsal surface.

References to this word in Pritchard actually refer to 'indentations' rather than teeth that the word implies.

Denticules {F}

Latin. dentatus - toothed; having teeth.

Short, tooth-like structures.

Example:

H.M.S. Challenger - Report on the Diatomaceae

(*Surirella dives*)

...the centre of the interspace between two adjoining canaliculi is provided with a row of granules or denticules.

Denticulate {F}

Latin. dentatus - toothed; having teeth.

Bearing short, tooth-like structures.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.

(*Denticula nana*)

Margin of F.V. (front view) faintly denticulate, from the ends of the striae.

Dentlet {F}

Latin. dentis - a tooth.

A small tooth.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.

(*Actinoptychus splendens*)

...each dentlet corresponding with the base portion of a compartment.

Deposition {E}

The dropping of transported particles out of moving water onto a resting place. Also, a transformation from gas to solid as a result of cooling.

Example:

Depressed {F}

In combination. Latin. de - down. Latin. premere - to press.

A word used to describe a feature that is indented or lower than the surrounding area or a feature adjacent to it. An example would be the depressed/raised nature of the sectors in *Actinoptychus* sp. See also Raised.

Example:

Diatoms of British Coastal Plankton by J. B. Sykes.
Valve surface divided into sectors that are alternately raised and depressed.

Destitute {F}

In combination. Latin. de - away. Latin. statuere - to place.

Entirely lacking in ornament. e.g. destitute of...

Example:

Report on the Irish Diatomaceae by E. O'Meara.
(*Odontidium sinuatum*)
...while the opposite side seems destitute of costae...

Detritus {P}{O}{Hy}{E}

Latin. de - off, terere - to rub.

Dead organic material, typically particulate plant material. Usually referring to material on or in the seafloor, but may be anywhere in the water column.

Example:

Bacterial control of silicon regeneration from diatom detritus (K.D. Bidle) [2001]
One isolate caused intense aggregation of diatom detritus, significantly reducing silicon regeneration.

Devensian {O}

Last geological stage of the Pleistocene epoch, covering 50,000 to 10,000 years ago, representing the last main advance of glaciers.

Example:

Multiproxy Devensian Late-glacial and Holocene environmental records at an Atlantic coastal site in Shetland (G. Whittington) [2003]
...the drainage of a small water body at Clettnadal, exposing deposits of Late Devensian and Holocene age. Pollen, diatom and invertebrate analyses have...

Devonian {P}

Named after its common occurrence in Devon, England.

A Geological age. Above the Silurian, below the Carboniferous.

Synonymous with The Old Red Sandstone.

Example:

Notes on Diatoms by F.B. Taylor
...the York Town beds in the United States, Early Devonian, is full of microscopic plants...

Diagenesis {P}{E}

Changes to sediment or fossils after burial. Similar to metamorphism, but with less depth and less heat.

Example:

Diapause {P}

A resting stage of halted or inhibited development of an organism related to seasonal changes in food supply, temperature or other factors.

Example:

Modelling the invasion risk of diapausing organisms transported in Ballast Sediments...(M. J. Wonham) [2005] ...diapause stages of diatoms, dinoflagellates, ciliates,...

Diaphanous {F}

In combination. Greek. dia - through. Greek. phainein - to show.

Light, delicate, almost transparent. Used when describing frustule appearance overall.

Opposite of Robust.

Example:

Synopsis of the British Diatomaceae by W. Smith.
(*Cocconeis diaphana*)

Valve elliptical, scarcely siliceous, diaphanous; striae obscure.

Diaphragm {F}

Greek. diaphragma - partition.

A thin partition or dividing membrane. Sometimes referring to Septa.

(French - cloison. German. zwischenband)

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(*Omphalopsis* genus)

...separated from the rest of the valve by a transverse diaphragm.

Diatom

In combination. Greek. dia - through. Greek. temnein - to cut. Also Greek. diatomos - cut through.

Microscopic unicellular alga with an external skeleton of silica

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(Introduction)

Each individual diatom consists of a single membranous cell...

Diatom Ooze {P}

In combination. Greek. dia - through. Greek. temnein - to cut. Also Greek. diatomos - cut through. plus Old English. wase - mud.

A deposit of diatom frustules found at depth in the world's oceans, where 30% or more is composed of such frustules.

Example:

Origin of Diatom Ooze Belt in the Southern Ocean (L. H. Burckle) [1987]

Although not noted on the map, much of the Ross Sea floor (particularly the western part) is covered by diatom ooze.

Diatomaceous {P}

In combination. Greek. dia - through. Greek. temnein - to cut. Also Greek. diatomos - cut through.

Of or consisting of diatoms, as in Diatomaceous Earth.

Example:

Arachnoidiscus by N.E. Brown.

The Arachnoidiscus apparently occurs only in the topmost part of the deposit, and a few feet underneath the level at which it occurs most plentifully it disappears entirely when we reach the typical rich bed of diatomaceous earth.

Diatomiferous {P}

In combination. Greek. dia - through. Greek. temnein - to cut. Also Greek. diatomos - cut through.

Example:

Notes on Diatoms by F.B. Taylor

117 - ...this is the oldest diatomiferous rock.

Diatomin {P}

See Xanthophyll.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(Nutrition)

It is generally supposed that the brown pigment diatomin masks the other colours.

Diatominivorous {P}

In combination. Greek. dia - through. Greek. temnein - to cut. Also Greek. diatomos - cut through, plus Latin. vorare - to devour.

An organism whose nutrition is derived from the consumption of diatoms.

Example:

On Some Undescribed Species of Diatomaceae
by George Norman.

...the tadpole of the Common Frog seems to be almost exclusively diatominivorous in the selection of its food.

Diatomite {P}{E}

In combination. Greek. dia - through. Greek. temnein - to cut. Also Greek. diatomos - cut through.

A fossilised deposit of diatom frustules.

Example:

The Biology of the Algae by F. E. Round.

...that these extensive diatomite beds are marine in origin...

Dichotomous, Dichotomous Ends {F}

In combination. Greek. dicha - in two. Greek. tome - a cut, plus Old English. ende.

In this context this means branching.

Example:

Marine Diatoms of the Philippine Islands by A. Mann
(*Amphora dichotoma*)

...radiating and curved costae, thicker on the dorsal side and tapering to fine dichotomous ends next to the rhabhe;...

Dieback {E}

The deep population crash when an environment can no longer support a population's

demands. Usually leads to dieoff (extinction).

Example:

Diel vertical migration {P}

Twice daily movement of planktonic or micronektonic organisms in response to day:night shift in light intensity. Typically migrating organisms are found at shallower depths during nighttime, deeper depths during daytime. Sometimes (incorrectly) termed diurnal vertical migration.

Example:

Eco-biology of marine diatoms with emphasis on the influence of physico-chemical parameters (S. Mitbavkar) [2003]

Many free living diatom cells in intertidal sediments have diel rhythms of vertical migration, moving to the surface when the sediment is exposed at low

Digitatiform {F}

Possibly synonymous with digitiform - formed like fingers.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(*Skeletonema*)

...valves inflated, hemi-spherical or digitatiform, with a marginal corona...

Dilated {F}

In combination. Latin. dis - apart. Latin. latus - wide. Also Latin. dilatus.

Expanded and flattened.

Example:

H.M.S. Challenger - Report on the Diatomaceae (*Synedra capitulata*)

Its extremities are dilated and rounded, and the valve is surrounded by...

Dimictic {P}

A lake that mixes its various layers twice per annum and in summer and winter stratifies.

Example:

Diatom-environmental relationships and nutrient transfer functions (P. Werner) [2005]

...polymictic Ontario lakes contain different diatom assemblages from deeper, dimictic lakes,...

Dimidiate {F}

Latin. dimidiare - to halve. plus Latin. stria - a furrow, flute of a column.

A term applied to a valve where the striae or costae only extend over half the valve or are interrupted in their progress by a median line or raphe.

Example:

Conspectus of the Families and Genera of the Diatomaceae - The lens.

(*Grunowia*)

Frustules nitzscoïd, valves undulate, marginate, dimidiate costate...

Diminuate {F}

Latin. diminuere - to break in pieces.

Being of small size.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.

(*Navicula radiosa*)

Frustules, narrow in girdle view, with apices diminuate.

Dimorphic {P}

In combination. Greek. di - twice. Greek. morphe - form.

A term used to describe a species that has two distinct forms. (see also Polymorphic)

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.

(*Rhizosolenia* genus)

Dimorphic forms occur, and these are often regarded as separate species.

Diploid {P}{E}

In combination. Greek. dis - twice. Greek. eidos - form.

Containing a double set of chromosomes in the somatic nuclei.

Example:

The Biology of the Algae by F. E. Round.

...and a doubling of the chromosomal complement to give the diploid state.

Diplontic {P}

In combination. Greek. dis - twice. Greek. eidos - form.

This term describes a life cycle where the diploid phase is predominant and the haploid phase is limited to the gametes.

Example:

Experimental studies on sexual reproduction in diatoms.

(V. A. Chepurnov) [2004]

They are almost unique among algae in being diplontic, and sexual reproduction is an obligate stage in the life cycle of most diatom species.

Disc-Shaped, Disc-Like {G}{F}

Greek. discos

See Disciform.

Example:

Marine Plankton - A Practical Guide

by G.E. Newell & R.C. Newell

(*Coscinodiscus*)

Simple, disc-like cells with valves...

Discharge {Hy}

Rate of fluid flow passing a given point at a given moment in time, expressed as volume per unit of time.

Example:

Modelling the spatial and temporal variability of diatoms in the River Murray (M. Bormans) [1999]

...studies have shown an inverse correlation between river discharge and diatom concentrations at different sites

along the river,...

Disciform {G}{F}

Greek. discos

Shaped like a disc.

Example:

Marine Diatoms of the Philippine Islands by A. Mann
(*Biddulphia gibbosa*)

The peculiar finishing of its angles, which have, instead of horns or processes, flat, disciform areas, bounded on the outer side by semicircular ridges...

Discoid {G}

Greek. discos

Like a disc.

Example:

On Some of the Rarer or Undescribed Species of
Diatomaceae by Thomas Brightwell.

...and thus the space between the two discoid valves is partially divided...

Discrete depth sampling {P}

Sampling protocol employing equipment that allows capture of organisms within a limited and defined depth stratum, with little or no contamination (unwanted captures) in depths shallower (or deeper) than the specified stratum. Essential to description of diel vertical migration (qv), seasonal and ontogenetic shifts in depth, etc. (cf open net haul).

Example:

Metazooplankton diversity, community structure and spatial distribution across the Mediterranean Sea in summer (A. Nowaczyk) [2011]

The discrete depth sampling within the top 200 m collected small-sized copepods and nauplii...

Disphotic (dysphotic) zone {H}

Mid-depths of the ocean (or in freshwater) where light intensity is sufficient during daylight hours to cue diel photic response or visual detection, but insufficient to support net positive photosynthesis (cf euphotic, aphotic).

Example:

Growth Inhibition of Phytoplankton Populations Cultured in Disphotic Zone Water by Insufficient Amounts of Dissolved Organic Carbon (T. Toyota) [1994]

Similar tendencies were confirmed with a marine diatom.

(*Skeletonema costatum*) dominating in the present disphotic zone water by culture experiments.

Dissepiment {F}

In combination. Latin. dis - apart. Latin. saepire - to hedge in.

A partition.

Example:

Marine Diatoms of the Philippine Islands by A. Mann
(*Stictodesmis australis*)

...which develop craticular plates ("dissepiments") within

the frustule, one beneath each valve,...

Dissimilar {F}

In combination. Latin. dis - not. Latin. similis - like.

'Not alike' or 'unlike'.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.

(Syndendrium)

Valves dissimilar, one smooth, the other furnished with...

Dissolved constituent {Hy}

Operationally defined as a constituent that passes through a 0.45-micrometer filter.

Example:

Heavy Minerals in Pleistocene and Cretaceous Sediments
along the Nassau-Suffolk County Border, Long Island, New
York (C. J. Brown) [2010]

...concentrations of dissolved constituent at any given
location...

Dissolved Organic Matter (DOM)(Dissolved Organic Carbon) {E}

Decomposing carbon compounds in water. Can be natural or artificial.

Example:

Dissolved oxygen (DO) {P}{Hy}

In combination. Latin. dis- - asunder. Latin. solvere - to loose. plus Greek. oxy - sharp.

A measure of the amount of oxygen available for biochemical activity in a given amount of water. Adequate levels of DO are needed to support aquatic life.

Example:

Freshwater Life by John Clegg

At a normal air pressure of 760mm the amount of dissolved oxygen in pure water, when fully saturated is....

Dissolved solids {Hy}

Amount of minerals, such as salt, that are dissolved in water; amount of dissolved solids is an indicator of salinity or hardness.

Example:

A water quality index for use with diatoms in the
assessment of rivers (G. Bate) [2004]

...a different system is necessary because diatoms are
mostly good indicators of the total dissolved solids.

Distal {F}

In combination. Latin. di(s) - apart. Latin. stare - to stand. Also Latin. distans.

Most widely separated parts.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(Chaetoceros septentrionalis)

...their proximal parts strongly curved, their distal
parts irregularly bent...

Distal raphe ends {F}

In combination. Latin. di(s) - apart. Latin. stare - to stand. Also Latin. distans.

The external terminus of the raphe at the poles or ends.

Example:

Inland diatoms from the McMurdo Dry Valleys and James Ross Island (R. M. M. E. R. Esposito) [2011]

Raphe linear; both proximal and distal raphe ends hook slightly...

Distant {F}

In combination. Latin. di - apart. Latin. stans - to stand.

In the context of diatom study this word is generally used to mean 'some distance removed' or 'spread out' as in texts such as Van Heurck's Treatise and Donkin's British Diatomaceae, sometimes however it is used to mean indistinct.

Example:

(1) British Diatomaceae by Arthur Scott Donkin.

(Navicula lata)

...striae not reaching to the median line, much shortened and connivent around the central nodule, distant, broad, and costate, 8 in .001".

(2) A Treatise on the Diatomaceae by Henri Van Heurck.

(Navicula formosa)

...crossed by a narrow sulcus rather distant from the margins...

Distended {F}

In combination. Latin dis - asunder. Latin. tentum - to stretch.

Swollen.

Example:

Marine Diatoms of the Philippine Islands by A. Mann

(Plagiogramma distinctum)

Valve narrow spindle-shaped, distended at the middle;...

Distribution {P}

Latin. dis - asunder, tributum - to allot.

(1) Biogeography: The geographical range of a taxon or group.

(2) Ecology: The spatial pattern or arrangement of the members of a population or group (cf dispersion).

Example:

Distribution of diatoms, coccolithophores and planktic planktic foraminifers along a trophic gradient during SW monsoon in the Arabian Sea (R. Schiebel) [2004]

The distribution of diatoms, coccolithophores and planktic foraminifers mirrored the hydrographic and trophic conditions...

Distributary {E}

A branching stream channel that flows away from a main stream channel. See Tributary.

Example:

Diurnal {P}{E}

Latin. diurnalis - a day.

Active during daylight hours (cf crepuscular, nocturnal).

Example:

The Diurnal Rhythm of the Littoral Diatoms of the River Eden Estuary, Fife (E. J. Perkins) [1960]

Diurnal tide {O}{E}

A tide in which there is only one high water and one low water each lunar day .

Example:

The colonization of periphytic diatom species on artificial substrates in the Ashar canal, Basrah, Iraq (H. A. Hameed) [2003]

It is twice a day affected by the diurnal tide of the river.

Diurnal vertical migration {P}

See diel vertical migration.

Example:

Resistance and resilience of benthic biofilm communities from a temperate saltmarsh to desiccation and rewetting (B. A. McKew) [2010]

The disappearance of diatoms from the sediment surface, cessation of diurnal vertical migration and thus a reduction in their capacity to...

Divaricated {F}{G}

In combination. Latin. dis - asunder. Latin. varicare - to spread the legs.

Parted into two branches. Forked.

Example:

Pritchard's Infusoria (Micromega corniculatum)
...the branches are divaricated and short...

Divergence {O}{P}{E}

A horizontal flow of water outward from a common center or zone, often associated with upwelling.

Also the evolutionary tendency or process by which animals or plants that are descended from a common ancestor evolve into different forms when living under different conditions (Divergent Evolution).

Example:

(1) Molecular genetic divergence of the centric diatom Cyclotella and Discostella (Bacillariophyceae) revealed by nuclear ribosomal DNA comparisons (S. W. Jung) [2010]

(2) Invitation to Oceanography (Paul R. Pinet) [2008]

Along the equator, upwelling results from current divergence,...

Divergence Angle {F}

In combination. Latin di - asunder. Latin. vergere - to incline.

The angle formed by two features, usually measured at the valve surface.

See also Brunel Group.

Example:

Rines, J.E.B. & P.E. Hargraves - The Chaetoceros
- Bibliotheca Phycologica (79)

Divergent {F}

In combination. Latin di - asunder. Latin. vergere - to incline.

To turn away from one another.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(Chaetoceros ingolfianus)

...directed towards both sides of the chain, diverging
from one another at an obtuse angle;...

Diversification {P}

Latin. di - aside, vertere - to turn.

Increase in the diversity of distinct types in one monophyletic lineage.

Example:

Exceptional preservation of marine diatoms in upper Albian
amber (V. Girard) [2009]

These finds allowed insights into the early diatom
diversification and evolution...

Diversion {Hy}

A turning aside or alteration of the natural course of a flow of water, normally considered physically to leave the natural channel. In some States, this can be a consumptive use direct from another stream, such as by livestock watering. In other States, a diversion must consist of such actions as taking water through a canal, pipe, or conduit.

Example:

Establishing realistic restoration targets for nutrient-enriched shallow lakes: linking diatom ecology and palaeoecology at the Attenborough Ponds, UK (C. D. Sayer) [2011].

The 1972 diversion of the River Erewash was clearly reflected in the sedimentary diatom record.

Diversity {P}

Latin. di - aside, vertere - to turn.

Ecology: Measure of the taxonomic complexity of a community with the components of species richness (number of species) and dominance or equitability (the distribution of individuals among species). Often measured by indices that estimate the likelihood that two individuals of the same species will be selected on successive random samples from the community. Example:

The diversity and distribution of diatoms: from cosmopolitanism to narrow endemism (P. Vanormelingen) [2008]

...and the factors driving diatom species diversity and geographic distributions,...

Diversity index {P}

Latin. di - aside, vertere - to turn.

Mathematical expression of the species diversity of a given community or area, typically including components of both species richness (qv) and equitability (qv). (Note: if you wish to calculate the diversity index then use an online tool to assist you).

Example:

Shannon's Diversity Index.

$$H' = - \sum_{i=1}^S p_i \ln p_i$$

Divide {Hy}

The high ground that forms the boundary of a watershed. A divide is also called a ridge.

Example:

DOC {P}

Dissolved organic carbon.

That fraction of nonliving organically bound carbon in seawater that will pass through a filter of stipulated pore size (often 0.45 μm). By far the largest fraction of organically-bound carbon in sea water.

Example:

Doldrums {P}

Origin uncertain.

Meteorology: Oceanic equatorial zone with low pressure and light variable winds at the surface, reflecting the overhead ascending arm of the tropical Hadley Cell (qv).

The zone moves seasonally north and south with respect to the equator (cf convection, trade winds).

Example:

Domain {P}

French.

Oceanography: Unique identifiable bodies of water with consistent properties, climatic locality and continuity. For example Transitional Domain (cf transition region).

Example:

Dome {P}

Latin. domus - a house.

Oceanography: An area of recumbent (return) flow in an equatorial current system resulting in upwelling (qv) as indexed by marked shoaling of isotherms and other features, as in the Guinea Dome (eastern tropical Atlantic) or Costa Rica Dome (eastern tropical Pacific).

Example:

Dome-shaped {F}

Latin. domus - a house.

A hemispherical protrusion or lump.

Example:

Some Fossil Diatoms from Barbados by G. Dallas Hanna & A.L. Brigger (*Kittonia gigantea*)

Valve ovate, dome-shaped with two very long intertwined processes...

Dominant Form {P}

Example:

Notes on Diatoms by F.B. Taylor
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Dorsal (margin)(side)(surface) {F}

Latin. dorsum - the back of a man or beast.

The more convex surface of a valve whose sides are of different curvature (dorsiventral)

Example:

Pritchard's Infusoria (*Eunotia* genus)

The lower or ventral side is flat, the other or dorsal side is convex, and often dentated.

Dorsiventral {F}{G}

In combination. Latin. dorsum - the back of a man or beast. Latin. ventriculus - the belly.

A valve where the two sides are of different curvature.

Example:

The Morphology of the Diatom Frustule
by H.G. Barber & E.Y. Haworth (*Eunotia*)

Isopolar or very occasionally heteropolar, dorsiventral.

Dorsum {F}

Latin. dorsum.

Actually the Latin for 'The back of a beast'.

See Dorsal Margin.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(*Amphora turgida*)

Valves with dorsum very convex,...

Dot {F}

Old English. dott - head of a boil.

A small spot.

Example:

A Treatise on the British Freshwater Algae
by G.S. West & F.E. Fritsch.
(*Cymbella*)

...valves with slightly radiating striae, often composed of distinct series of dots, more closely placed...

Double-germ {F}

Example:

H.M.S. Challenger - Report on the Diatomaceae
(*Asteromphallus challengerensis*)

...while we are here brought face-to-face with the development of a double germ or double sporule...

Double-Lyrate {G}{F}

Greek. lyra.

Lyre-shaped. (having the terminal lobe much larger than the lateral ones.)

See Lyrate.

Example:

Marine Diatoms of the Philippine Islands by A. Mann
(*Navicula imitans*)

...the beading interrupted by a double-lyrate or H-shaped hyaline design similar...

Double Raphe {F}

Greek. rhaphe - a seam.

A raphe combination that is situated on either side of the terminal nodules and runs through either side of the central nodule.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
(*Vanheurckia* genus)

Central and terminal nodules linear-elongated between the two branches of a double raphe.

Double-sporule {F}

Example:

H.M.S. Challenger - Report on the Diatomaceae
(*Asteromphallus challengeriensis*)

...while we are here brought face-to-face with the development of a double germ or double sporule...

Downstream Slope {Hy}

The slope or face of the dam away from the reservoir water. This slope requires some kind of protection (e.g.; grass) from the erosive effects of rain and surface flow.

Example:

The Brukunga Pyrite Mine - A Field Laboratory for Acid Rock Drainage Studies (G. F. Taylor) [2003]

The downstream slope of the dam wall was armoured using waste rock.

Downwelling {P}

Sinking of ocean surface waters, as in the central regions of an oceanic anticyclonic Gyre (cf upwelling).

Example:

Upwelling-downwelling sequences in the generation of red tides in a coastal upwelling system (G. H. Tilstone) [1994]

...a downwelling event disrupts the diatom bloom,...

Drainage area {Hy}

The drainage area of a stream at a specified location is that area, measured in a horizontal plane, which is enclosed by a drainage divide.

Example:

Drainage basin {Hy}{O}

A land area where precipitation runs off into streams, rivers, lakes, and reservoirs. It is a land feature that can be identified by tracing a line along the highest elevations between two areas on a map, often a ridge. Large drainage basins, like the area that drains into the River Severn contain thousands of smaller drainage basins.

Example:

Environmental History of the Lake Vaihiria Drainage Basin, Tahiti (A. Parkes) [1992]

The pollen and diatom record in the sediment core is diagnostic of environmental conditions in the Lake Vaihiria drainage basin during the past...

Dredging(s) {P}{Hy}{E}

Origin unknown.

Alluvial deposits raised from the bottom of the oceans by means of a dredge (a net or bag dragged along the bed of the sea)

Example:

Practical Directions for Collecting, Preserving, etc. by Mead Edwards, Johnston & Smith

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Drift {P}

Middle English.

(1) Oceanography: Movement of objects at the ocean surface associated with advection by currents or being blown by the wind.

(2) Geology: Any sediment laid down through the activity of glacial ice.

(3) Geophysics: Movement of crustal plates, including continents or portions thereof, relative to the mantle.

Example:

Drum-shaped {H}

Germanic. trommel - a drum.

The classic circular pillbox shape.

Example:

The Algae - A review by G. W. Prescott.

Several genera are drum-shaped or capsule-shaped, as seen in side view.

Dwarfism {P}

Old English. dwoerg.

The condition of being stunted, much smaller than normal, having restricted growth.

Example:

Iterative evolution in the diatom genus *Rhizosolenia* (U. L. F. Sorhannus) [1991]

...a result of size-selective grazing of diatoms which could have given rise to antipredatory size adaptation through gigantism and dwarfism.

Dysphotic Zone {H}

The zone where there is insufficient light penetration for photosynthesis to take place.

Example:

Phytoplankton by A.D. Boney

...has enough light for photosynthesis but the dysphotic zone is too dim.

Dystrophic {H}{P}{E}

In combination. Greek. prefix- dys meaning bad. Greek. trope - nourishment.

An environment rich in organic matter but usually quite low in nutrient value, usually having high humic conditions.

(Compare with Eutrophic, Mesotrophic and Oligotrophic)

Example:

Life in Lakes and Rivers

by T.T. Macan & E.B. Worthington

...which were poor peaty tarns of the dystrophic type...

Dyticon {H}

An ooze-inhabiting community.

Example:

E

East Pacific Barrier {P}

The barrier to dispersal of shallow-water marine organisms (as well as terrestrial organisms) imposed by the vast islandless expanse of the eastern Pacific Ocean.

Example:

Eastern boundary current {P}

The relatively shallow, slow, high productivity near-coastal limb of the great subtropical anticyclonic gyres found on the eastern margin of oceans (especially the Atlantic and Pacific); eg the California, Peru, Canary and Benguela Currents.

Example:

Ebb current {O}

The movement of a tidal current away from the coast or down an estuary or tidal waterway; the opposite of flood current. Nontechnically called ebb tide.

Example:

Microphytobenthos as a biogeomorphological force in intertidal sediment stabilization (L. J. Stal) [2010]

The runnels and ridges usually show a regular pattern running in the direction of the ebb current. Diatoms that colonize these mudflat...

Ebb tide {P}{O}

The receding or outward flowing portion of the tidal cycle (cf flood tide).

See Ebb Current

Example:

Transport and distribution of bacteria and diatoms in the aqueous surface microlayer of a salt marsh (R. W. Harvey) [1983]

During ebb tide, surface microlayer concentrations of diatoms were highest just after high tide, but were generally much lower...

Eccentric {F}

In combination. Greek. ek - out of. Greek. kentron - centre.

A circle or similar being off centre in relation to another feature.

Synonymous with Excentric.

Example:

H.M.S. Challenger - Report on the Diatomaceae (Toxonidea challengeriensis)

The raphe remains almost central throughout the greater part of the valve, but becomes eccentric near the more attenuated extremities.

Ecdemic {P}

Foreign, non-native, introduced (cf endemism).

Example:

Ecoregion {Hy}

An area of similar climate, landform, soil, potential natural vegetation, hydrology, or other ecologically relevant variables.

Example:

Ecosystem {O}{Hy}{E}

The organisms in a community and the nonliving environment with which they interact

Example:

Ecozone {H}

In combination. Greek. oikos - house. Greek. zona - a girdle.

A transition area between two adjacent ecological communities, usually exhibiting competition between organisms common to both.

Example:

Edaphic {P}

Referring to the soil.

Example:

Eddy {O}

A localized chaotic movement of air or liquid in a generally uniform larger flow.

Example:

Edge species {P}

A species found predominantly or commonly in the marginal zone (ecotone) of a community.

Example:

Effluent {Hy}{E}

Outflow from a particular source, such as a stream that flows from a lake or liquid waste that flows from a factory or sewage-treatment plant.

Example:

Electrolyte Value {P}

In combination. Greek. electro - comb. Greek. lysis - losing. plus Old French - value.

A determination of the ion concentration as correlated with the conductivity of same.

Example:

Elevated, Elevation {F}

Latin. levare - to raise.

Raised to a higher position. Prominent.

Example:

Marine Diatoms of the Philippine Islands by A. Mann
(*Actinodiscus Schleinitzii*)

...seeing that it has a decided ridge traversing each elevated sector of the circle and ending at the margin...

Elevated Sector {F}

Latin. levare - to raise. plus Latin. sectum - to cut.

A segment of the frustule (usually a number in alternating raised/lowered formation) that stands proud of the segments either side of it.

Example:

Marine Diatoms of the Philippine Islands by A. Mann
(*Actinodiscus Schleinitzii*)

...seeing that it has a decided ridge traversing each elevated sector of the circle and ending at the margin...

Elevated Zone {F}

Latin. levare - to raise. plus Greek. zone - a girdle.

Nearly always referring to Centric forms where the ornamentation of the valve face clearly distinguishes a zone or zones that are proud of their adjacent features. When referred to this way this zone usually forms a concentric circle within the circumference.

Example:

The Diatomaceae of Philadelphia and Vicinity
by C.S. Boyer.

(*Pseudauliscus spinosus*)

...and rising to an elevated zone near the border,...

Elliptic(al), El(l)ipsoidal {G}

Greek. elleipsis. Latin. ellipsis - to fall short.

With sides forming ellipses, or plane curves.

Example:

(1) A Treatise on the Diatomaceae by Henri Van Heurck.
(*Navicula ulvacea*)

Valves elliptic, with apices obtuse rounded.

(2) A Treatise on the Diatomaceae by Henri van Heurck.
(*Melosira Dickei*)

Typical frustules are often mixed with other elongated, elipsoidal frustules,...

Elongate {F}

In combination. Latin e - from. Latin. longus - long.

Long and narrow.

Example:

The Algae - A review by G. W. Prescott.

The cells are elongate with subparallel margins...

Emarginate {F}

On combination. Latin e - out. Latin. marginare - provide with a margin.

Depressed and notched instead of pointed at the tip/ or /the margin being broken by a notch or the segment of a circle.

Example:

Report on the Irish Diatomaceae by E. O'Meara.

(*Tetracyclus emarginatus*)

...inflections deeply notched or emarginate...

Embossed {F}

In combination. Prefix. em - with. Old French. boce - to beat.

In general this would mean to be covered with bosses, or have features standing out in relief. It may however, also be used, to mean having a single central boss.

Example:

New Species of Fossil or Pelagic Marine Diatoms

by J. Brun. Trans. J. W. Barker.

(*Rhabdonema musica*)

Valve view with embossed sides.

Emboxed {F}

In combination. Latin. em - into. Latin. buxis - a box.

To set in a box.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.

(*Melosira Dickiei*)

...formed of several individuals incompletely partitioned, emboxed one in the other.

Emersed aquatic plants {H}

Plants that are partially emergent, typically referring to freshwater aquatic plants.

Example:

Endemic {P}

Native or limited to a certain area

Example:

Endobenthic {H}

Greek. endo - within,

Organisms that live in the surface sediments on the sea floor (cf epibenthic, hyperbenthic, infauna).

Example:

Endochrome {P}

In combination. Greek. endo - within. Greek. chroma - colour.

A name given to the body containing chlorophyll or xanthophyll.

See Chloroplast, Chromatophore, Plastid, Xanthoplast.

Example:

Synopsis of the British Diatomaceae by W. Smith.

The Endochrome of the diatomaceous frustule, is not, however, spread with uninterrupted regularity...

Endocyst {P}

In combination. Greek. endo - within. Greek. krystis - a bladder.

Essentially the 'resting stage' of the diatom. Formed at a point where conditions become unfavourable, either environmental or physical. Also Statospore, Endospore, Ruhespor.

Example:

Marine Diatoms of the Philippine Islands by A. Mann

(Page 82 - *Herotheca*)

The strong suspicion that the forms composing this genus are only endocysts escaped from frustules of *Rhizosolenia*

or kindred general ...

Endogenous {P}

In combination. Greek. endo - within. Greek. gonos - begetting.

Increasing by means of internal growth or formed within.

Example:

The Biology of the Algae by F. E. Round.

Siliceous scales occur on some genera; siliceous cysts are formed endogenously.

Endosmose {P}

In combination. Greek. endo - within. Greek. osmos - impulse.

Inward osmosis, i.e. toward the solution.

Example:

Synopsis of the British Diatomaceae by W. Smith.

(Introduction)

I am constrained to believe that the movements of the Diatomaceae are owing to forces operating within the frustule, and are probably connected with the endosmotic and exosmotic action of the cell.

Endospore {P}

In combination. Greek. endo - within. Greek. sporos - a seed.

A spore formed within a mother-cell. Also the innermost membrane of a spore-wall.

See Endocyst.

Example:

Notes on Diatoms by F. B. Taylor.

In certain genera, after a period of active vegetative life the frustule develops within it an internal secondary phase called a rest-spore (endocyst, endospore, ruhespore, statospore)

Engibenthic (engybenthic) {H}

Greek. engys - near,

Close association with the sea floor.

Example:

Entire {F}

Latin. integer - whole.

In general when used to describe a valve or frustule this word means 'over the whole surface'. It may, however, also mean 'a margin devoid of teeth or lobes' or even 'unmingled'.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.

(*Amphora crassa*)

Markings entire, coarse, subdistant.

Environment {P}

French. environ - around.

Ecology: The complete range of external conditions, physical, chemical and biological, in which an organism lives.

Example:

Environmental sample {Hy}

A water sample collected from an aquifer or stream for the purpose of chemical, physical, or biological characterization of the sampled resource.

Example:

Eocene {P}

In combination. Greek. eos - dawn. Greek. kainos - new day.

The oldest division of the Tertiary.

Example:

Notes on Diatoms by F.B. Taylor

...in the Eocene of the London Clay...

Epeiric sea {H}

See Epicontinental sea.

Example:

Ephemeral stream {Hy}

A stream or part of a stream that flows only in direct response to precipitation; it receives little or no water from springs, melting snow, or other sources; its channel is at all times above the water table.

Example:

Ephippiform {F}

Example:

H.M.S. Challenger - Report on the Diatomaceae
(*Campylodiscus zebuanus*)

...it is easy to understand how the valve may become more and more winding and ephippiform.

Epibenthic {H}{E}

Greek. epi - upon,

Pertaining to organisms that live on the surface of the sea floor (cf endobenthic, hyperbenthic, infauna).

Example:

Epibiota {P}

Greek. epi - upon,

An organism or group of organisms occurring commensally on the surface of another organism.

Example:

Epicingulum {F}

In combination. Greek. epi - over (used as prefix in conjunction with) Latin. cingulum - a girdle or belt.

The girdle is located between the two valve faces and is subdivided into two overlapping portions; the epicingulum and the hypocingulum. The epivalve and the epicingulum comprise the epitheca and the hypovalve and the hypo cingulum comprise the hypotheca.

Example:

Diatoms from the South China Seas
by Dickman, Hodgkiss, Cheng & Gao.

(Glossary Entry)

Epicontinental sea {H}

Greek. epi - upon,

A shallow sea extending far into the interior of a continent, eg Hudson's Bay, Baltic Sea.

Example:

Epiclyside {H}

Greek. epi - upon,

Pertaining to the tide pools of the upper shore.

Example:

Epiderm, Epidermal, Epidermis {F}

In combination. Greek. epi - upon. Greek. derma - the skin.

An outer sheath or cuticle.

Example:

Synopsis of the British Diatomaceae by W. Smith.

(Introduction)

...and are often connected with minute canals hollowed out between the siliceous epiderm and the internal cell-membrane...

Epidermal Envelope {F}

In combination. Greek. epi - upon. Greek. derma - the skin. plus Old French. enveloper.

Example:

Synopsis of the British Diatomaceae by W. Smith.

(Introduction)

At the expansions of this band the siliceous is still further accumulated, and forms Nodules, which also strengthen the epidermal envelope.

Epifauna {P}{E}

Greek. epi - upon,

Pertaining to animals that live on as contrasted to living within a substratum (living or nonliving) (cf benthos, infauna, phoresy).

Example:

Epilimnion {H}

Greek. epi - upon,

Upper warm relatively thin (usually) mixed layer in a thermally stratified lake in summer - lying over the deeper usually considerably thicker cold hypolimnion (qv).

Example:

Epilimnion {P}

In combination. Greek. epi - upon. Greek. limne - a pool or marsh.

The top layer of water, defined by its temperature, above the thermocline.

See also Hypolimnion, Metalimnion, Thermocline.

Example:

Freshwater Algae -their Microscopic World Explored

by H. Canter-Lund & J.W.G. Lund

pg18 - ...algae may be mixed more or less at random in the

upper epilimnion but the nearer they come to the metalimnion, the less turbulent the water.

Epilithon (Epilithic) {H}

In combination. Greek. epi - over (used as prefix in conjunction with) Greek. lithos - stone.

Living on stable rock or stone surfaces.

Example:

The Biology of the Algae by F. E. Round.

The epilithic flora may be contaminated with species filtered out of the water...

Epineuston {H}

Greek. epi - upon,

Organisms living on the surface film of a body of water (cf hyponeuston).

Example:

Epipelagic {H}

Greek. epi - upon,

(1) Stratum between 0 - 200 m in the offshore ocean.

(2) In the oceanic realm, the euphotic (qv) zone, where light levels permit positive net rates of photosynthesis.

(3) Pelagic organisms found during daylight within these depth limits.

Example:

Epipellic {H}

Greek. epi - upon,

Growing on mud.

Example:

Epiphyte, Epiphytic {H}{P}{E}

Greek. epi - upon, Greek. phyton - a plant

Attached to a plant, anything from a tree to a piece of algae, for physical support, but does not draw nourishment from it.

Example:

Epipleuston {H}

Greek. epi - upon,

Organisms which move over the surface film of water with most or all of their bodies above the water.

Example:

Epipelon (Epipellic) {H}

In combination. Greek. epi - over (used as prefix in conjunction with) Greek. pelos - clay or mud.

Living on or in fine sediments and mud.

Example:

The Biology of the Algae by F. E. Round.

This epipellic flora is mainly composed of diatoms, blue-green algae...

Epiphyton (Epiphytic), (Epiphyte) {H}

In combination. Greek. epi - over (used as prefix in conjunction with) Greek. phyton - Plant.

Living attached to other plants or algae.

Example:

The Biology of the Algae by F. E. Round.

The attachment of epiphytic algae is in part related to the structure of the surface layers of the plants...

Epipsam(m)on, Epipsam(m)ic {H}

In combination. Greek. epi - over (used as prefix in conjunction with) Greek. psammos - sand.

Living attached to grains of sand.

Example:

Diatoms from the South China Seas
by Dickman, Hodgkiss, Cheng & Gao.

(Glossary Entry)

Benthic diatoms that attach to submerged sand grains are referred to as epipsamic

Epitheca {F}

Latin. epitheca - an addition, increase. In combination. Greek. epi - over (used as prefix in conjunction with) Latin theca - that in which anything is enclosed, an envelope, cover, case, etc.

This is the term given to the combination of Epivalve and Epicingulum.

Example:

Algae and Fungi by C. J. Alexopoulos & H. C. Bold.

Each diatom is enclosed by two slightly overlapping walls or valves....the larger is the epitheca and the smaller, the hypotheca.

Epivalve {F}

In combination. Greek. epi - over (used as prefix in conjunction with) Latin. Valvae - leaves or folds.

The larger of the two valves which make up a frustule. (The larger valve can, in most cases, be considered to be the older valve) See also Hypotheca.

Example:

Diatoms from the South China Seas
by Dickman, Hodgkiss, Cheng & Gao.

(Glossary Entry)

Hypocingulum - The girdle is located between the two valve faces and is subdivided into two overlapping portions; the epicingulum and the hypocingulum. The epivalve and the epicingulum comprise the epitheca and the hypovalve and the hypo cingulum comprise the hypotheca.

Epizoic, Epizooic {H}

In combination. Greek. epi - upon. Greek. zoion - an animal.

An organism or group of organisms living commensally on the surface of an animal.

Example:

The Morphology of the Diatom Frustule
by H.G. Barber & E.Y. Haworth (Synedra)
...at least one epizooic species...

Equal-width increment (EWI) sample {Hy}

A composite sample across a section of stream with equal spacing between verticals and equal transit rates within each vertical that yields a representative sample of stream conditions.

Example:

Equatorial {H}

Latin. aequalis - to make equal.

Referring to the area of one or more of the equatorial principal upper water masses or to the Atlantic equatorial area.

Example:

Equatorial region {H}

An area of sea surface underlain by one of the equatorial principal upper water masses (Eastern Tropical Pacific, Pacific Equatorial, Indian Equatorial, or, in the Atlantic, lying astride the equator, approximately 10° N to 10°S, but broader latitudinally in the east than in the west).

Example:

Equatorial species {P}

A pelagic oceanic species found in or limited to one or more equatorial regions.

Example:

Equatorial tide {O}

Tide occurring when the moon is near the equator; diurnal inequality is at a minimum.

Example:

Equatorial trough {P}

See Intertropical Convergence Zone.

Example:

Equidistant {F}

In combination. Latin. aequus - equal. Latin. di - apart. Latin. stans - to stand.

Equally spaced out.

Example:

Synopsis of the British Diatomaceae by W. Smith.
(Campylodiscus genus)

...valves equidistant; canaliculi radiated.

Erdmehl {P}

German.

Example:

Notes on Diatoms by F.B. Taylor

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Estuarial {H}

Latin. aestus - commotion, tide.

Estuarine.

Example:

Estuarine {H}

Latin. aestus - commotion, tide.

Referring to the habitat, half salt water, half freshwater found where a river meets the sea - an estuary.

Example :

Estuarine waters {Hy}

Deepwater tidal habitats and tidal wetlands that are usually enclosed by land but have access to the ocean and are at least occasionally diluted by freshwater runoff from the land (such as bays, mouths of rivers, salt marshes, lagoons).

Example :

Estuarine wetlands {Hy}

Tidal wetlands in low-wave-energy environments where the salinity of the water is greater than 0.5 part per thousand and is variable owing to evaporation and the mixing of seawater and freshwater; tidal wetlands of coastal rivers and embayments, salty tidal marshes, mangrove swamps, and tidal flats.

Example :

Estuarine Zone {Hy}{E}

The area near the coastline that consists of estuaries and coastal saltwater wetlands.

Example :

Estuary {H}{O}{Hy}

Latin. aestus - commotion, tide.

A semienclosed coastal body of water which has a free connection with the open sea and in which typically seawater is measurably diluted with freshwater derived from land drainage (cf negative estuary, neutral estuary).

Example :

Eucentric {F}{G}

Centric diatoms that are circular or nearly so when in valve view.

Example :

Euhalobous {H}{P}

Having a salt concentration of between 30,000mg Chloride/L and 40,000mg Chloride/L Marine environments.

Example :

Eukaryote (Eukarya) {P}{E}

Example :

Freshwater Algae - Their Microscopic World Explored
by H. Canter-Lund & J.W.G. Lund.

Eulittoral zone {H}

Greek. eu - well,

In marine ecosystems the main area of the littoral (qv) zone lying below the littoral fringe and above the sublittoral.

Example :

Euphotic Zone {H}{E}

In combination. Greek. eu - well. Greek. photos - light. plus Greek. zone - a girdle.

The zone near the surface of the sea, above the seasonal thermocline, with enough light for photosynthesis to take place. See also Thermocline.

Example:

Phytoplankton by A.D. Boney

The euphotic zone has enough light for photosynthesis...

Euplankton {H}

In combination. Greek. eu - well. Greek. planktos - wandering.

Spending whole existence in the plankton

Example:

The Algae - A review by G. W. Prescott.

They appear in the euplankton...

Euplankter (Euplanktonic) {H}

In combination. Greek. eu - well. Greek. planktos - wandering.

A member of the Euplankton.

Example:

The Algae - A review by G. W. Prescott.

Stephanodiscus is a common euplankter in mostly hard-water lakes...

Eury - {P}

Latin. eury - wide.

Prefix, meaning wide.

Example:

Euryhaline {H}{P}

In combination. Greek. eurys - wide. Greek. hals - salt.

Adapted to a wide range of saline conditions. (Compare with Stenohaline)

Having a salt concentration of between 30,000mg Chloride/L and 40,000mg Chloride/L Marine Environments.

Example:

Marine Plankton - A Practical Guide

by G.E. Newell & R.C. Newell

(Skeletonema)

It is widely distributed, euryhaline and abundant in estuaries,...

Eurythermal (Eurythermic) {H}

Latin. eury - wide.

Organisms with tolerance to a wide temperature range.

Example:

Eurytopic {H}

Latin. eury - wide.

Able to withstand a wide variety of environmental situations and/or found in a wide variety of habitats.

Example:

Diatoms in Eastern Australia by Neils Foged.

(Navicula tryblionella)

Eutrophic {H}{P}{E}

Greek. eutrophia. (Greek. eu. - well. Greek. trophus - feeding.)

An environment that is rich in mineral nutrients. (Compare with Dysotrophic, Mesotrophic and Oligotrophic)

Example:

The Biology of the Algae by F.E. Round.

On even more eutrophic, base rich sediments, e.g. in some loughs in Ireland...

Eutrophication {P}{Hy}{E}

Greek. eutrophia.

The process of enriching an environment with nutrients. Usually applied to the case of over-supply of nutrients by human activities.

Example:

Everted {F}

In combination. Latin. e - from. Latin versum - to turn.

To curve outwards.

Example:

British Diatomaceae by Arthur Scott Donkin.

(*Navicula lyra*)

...unstriated area narrow, linear, strongly incurved in the middle and everted towards the extremities...

Excavation {F}

In combination. Latin. ex - out. Latin. cavus - hollow.

A hollow or scoop.

Example:

A Treatise on the British Freshwater Algae

by G.S. West & F.E. Fritsch.

(*Rhizosolenia morsa*)

...exhibit a characteristic excavation in the girdle-view.

Excentric {F}

In combination. Greek. ek - out of. Greek. kentron - centre.

A circle or similar being off centre in relation to another feature.

Synonymous with Eccentric.

Example:

H.M.S. Challenger - Report on the Diatomaceae (*Pleurosigma thaitiense*)

The flexion is moderate, and the central raphe becomes decidedly excentric towards the ends.

Excised {F}

In combination. Latin. ex - from. Latin. caedere - to cut.

Scraped or cut out.

Example:

Pritchard's Infusoria

(*Gomphonema discolor*)

...is smooth, slightly excised at the truncated end.

Exogenous {P}

In combination. Greek. exo - outside. Greek. gonos - begetting.

Increasing by means of successive additions to the exterior surface. Also known as Apposition.

Example:

Exosmose {P}

In combination. Greek. ex - out. Greek. osmos - impulse.

Outbound osmosis, i.e. away from the solution. See also Endosmose.

Example:

Synopsis of the British Diatomaceae by W. Smith.
(Introduction)

I am constrained to believe that the movements of the Diatomaceae are owing to forces operating within the frustule, and are probably connected with the endosmotic and exosmotic action of the cell.

Exponential growth {P}

A model of population growth explicitly stated as $dN/dt = rN$ where N is the number of individuals alive at any time t and r is the intrinsic rate of population increase (which in this, the simplest case, is constant for all values of N).

Example:

Extremities {F}

Latin. extremus - on the outside.

At the outermost edges of...

Example:

Synopsis of the British Diatomaceae by W. Smith.
(Navicula Semen)

Valve oval, contracted towards the rounded extremities;...

Eye {F}

Old English. eage.

A round aperture.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(Actinocyclus Ehrenbergii)

A large transparent marginal "eye" and a crown of far apart spinulae...

(Actinocyclus genus)

Cells single, like Coscinodiscus, but with a conspicuous "eye" or clear space in the valve margin.

Note:- Eye-spot is also sometimes encountered.

Eye-spot {F}

Old English. eage. plus Old Norse. spotti.

Example:

Notes on Diatoms by F.B. Taylor

86 - Tertiary structure has been observed in the eye-spots of Coscinodiscus asteromphalus...

F

f., form, forma

Latin. forma - form of

This abbreviation or word is used to describe a simple but consistent divergence from the norm when giving a name to a particular occurrence of a species.

Example:

New and Rare Diatoms from Oregon and Washington
by H.E. Sovereign.

Stenopterobia intermedia form undulata.

F.Br. {H}

An abbreviation used to describe the source of diatom material.

Fossil Brackish Water. See also Fossil. See also Brackish.

F.F.W. {H}

An abbreviation used to describe the source of diatom material.

Fossil Fresh Water. See also Fossil.

F.M. {H}

An abbreviation used to describe the source of diatom material.

Fossil Marine. See also Fossil. See also Marine.

F.W. {H}

An abbreviation used to describe the source of diatom material.

Freshwater.

Face {Hy}

The external surface of a structure, such as the surface of a dam.

Example:

Facet, Facetted {P}

French. facette.

One of a number of flat faces as seen in a cut diamond or crystal.

Example:

Portfolio of Drawings etc. by Thomas Bolton.

(*Asterionella formosa*)

...are attached to each other by the facetted margins
of this...

Fan {F}

Old English. fann.

Any shape that is a sector of a circle.

Example:

Pritchard's Infusoria

(*Echinella*)

...in the form of a fan, or cluster-like.

Fascia(e) {F}

Latin. fascia - a band.

A hyaline area that extends across most of the face of a valve (1). Word also used to describe face to face contact (2).

Example:

(1) The Morphology of the Diatom Frustule by H.G. Barber & E.Y. Haworth (Neidium) Axial area narrow, central area rounded or elliptic, occasionally an oblique fascia.

(2) The Diatomaceae of Philadelphia and Vicinity by C.S. Boyer. (Plagiogramma genus)
Frustules quadrangular, adnate in fasciae, or free.

Fascicle, Fasciculi, Fascicula, Fasciculus, Fascicules {F}{P}

Latin. fasciculus - a small bundle, packet.

A bundle or cluster of areolae. Densities of these have been termed keel puncta in some older literature. Fascicle is also used to describe tufts or clusters of living diatoms.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(Coscinodiscus genus)
...areoles divided up into bundles or fasciculi forming sectors.

Fasciculate {F}

Latin. fasciculus - a small bundle, packet.

Containing a bundle or cluster of areolae.

Example:

The Diatomaceae of Philadelphia and Vicinity
by C.S. Boyer.
(Coscinodiscus nitidulus)
...and fasciculate near the border.

Fastigate {F}

Latin. fastigium - a gable-end.

Sloping to a point possibly with erect branches running parallel.

Example:

Report on the Irish Diatomaceae by E. O'Meara.
(Schizonema smithii)
...much divided, fasciculated and fastigate above...

Fathom {O}

The common unit of depth in the ocean, equal to six feet. It is also sometimes used in expressing horizontal distances, in which case 100 fathoms make one cable or very nearly one-tenth nautical mile .

Example:

Fathom curve {O}

Same as isobath.

Example:

Feeble {F}

Old French. foible.

Used in two contexts. One to mean faint, hardly visible, the other to indicate a weak tendency.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.

(*Navicula salinarum*)
...the median radiant, the terminal feebly convergent.

Fen {Hy}{E}

Peat-accumulating wetland that generally receives water from surface runoff and (or) seepage from mineral soils in addition to direct precipitation; generally alkaline; or slightly acid.

Example:

Fenestra {F}

Normally only used when referring to keel-bearing diatoms such as *Surirella* and *Cymatopleura* where part of the valve surface and a portion of the mantle fuse together to form openings or windows.

Example:

Fenestrated {F}

Window-like or divided into shiny portions.

Example:

Festooned {F}

Latin. derived from festum - a festival.

A festoon is a garland suspended between two points. This garland may be simply a wavy line or a more ornate series of undulating markings.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
(*Amphiprora ornata*)

...with alae gently undulate and festooned throughout their length.

Fetch {Hy}{O}{E}

An area of the sea surface over which a wind with constant direction and velocity is blowing, thus forming waves.

Example:

Fibril {F}

Latin. fibra - a thread.

A minute thread-like structure.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(*Chaetoceros teres*)

...very fine puncta on the margin of the primary valve from which issue fine fibrils.

Fibulae (pl.), Fibula (sing.) {F}

Latin. fibula - a clasp, buckle, pin, latchet, brace etc.

A siliceous area that forms a bridge between areas of the valve on either side of the raphe.

Example:

The Morphology of the Diatom Frustule
by H.G. Barber & E.Y. Haworth (*Cymbellonitzschia*)
...supported by bars (keel puncta or fibulae).

Fibulate {F}

Latin. fibula - a clasp, buckle, pin, latchet, brace etc.

Possessing fibulae that pass beneath the raphe. (see Also - Fibulae)

Example:

Fickian diffusion {Hy}

Spreading of solutes from regions of highest to regions of lower concentrations caused by the concentration gradient. In slow moving groundwater, this is the dominant mixing process.

Example:

Fiddle-shaped {F}

Old English. fithel.

Shaped like a violin.

Example:

Synopsis of the British Diatomaceae by W. Smith.

(*Cymatopleura apiculata*)

Valve fiddle-shaped, apiculated...

Filament, Filamentous {H}{O}

Latin. filum - a thread.

A row of frustules that are joined end to end, side by side. These may be either adjoined (in contact with each other) or held in place by a mucus thread or gelatinous tube.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.

(*Cymatosira Belgica*)

Frustules rectangular, in short filaments, with girdle face constricted near the apices.

File {F}{P}

Latin. filum - a thread.

A thread or line of features or frustules. Used when describing lines of pores, puncta, granules etc.

Example:

(1) H.M.S. Challenger - Report on the Diatomaceae (Amphora decora)

...being marked by striae alternating with double files of granules.

(2) Report on the Irish Diatomaceae by E. O'Meara.

(*Schizonema*)

Frustules arranged in one or more files within the gelatinous tubes...

Filiform {P}

Latin. filum - a thread.

Threadlike.

Pritchard's Infusoria (Gomphonema genus)

...fixed upon a distinct filiform pedicle...

Fillet {F}

French. filet. from Latin. filum - a thread.

A small band of hyaline silica. However see note below.

Example:

Pritchard's Infusoria
(*Navicula*)

It is in the form of broad plates or fillets, from two to four.

The only reference seen (above) refers to the Chloroplasts.

Fimbriae, Fimbriae {F}

Latin. fimbriae - fibres, fringe.

A fringe.

Example:

H.M.S. Challenger - Report on the Diatomaceae
(*Cyclotella fimbriata*)

...a series of very small arches or elegant fimbriae...

(2) Diatoms from the South China Seas

by Dickman, Hodgkiss, Cheng & Gao.

(Glossary Entry)

Fimbriae - Marginal ridge with undulations or small (finger-like) projections.

Fimbriate {F}

Latin. fimbriae - fringe.

This may mean fringed, as in having a hair-like edge or may also be used to indicate a narrow border.

Example:

New Species of Fossil or Pelagic Marine Diatoms
by J. Brun. Trans. J. W. Barker.

(*Coscinodiscus entoleion*)

The others (alveoles) increase in size gradually up to the margin and are punctate and fimbriate.

Firstling-cell {F}

Example:

Report on the Irish Diatomaceae by E. O'Meara.
(*Orthosira Dickei*)

A separation of the firstling-cell followed...

Firth {H}

Old Norse. fiorthr. (Norse. fjord)

An arm of the sea. Generally a Scottish name for a sea inlet, often relatively deep and narrow.

Example:

Fission {P}

Latin. fissum - to cleave.

A cleaving. Usually referring to reproduction by dividing.

Example:

Notes on Diatoms by F.B. Taylor
155

Fissiparous {P}

Latin. fissum - to cleave.

Reproduction by fission.

Example:

H.M.S. Challenger - Report on the Diatomaceae (*Terebraria* sp.)

...has recently undergone fissiparous division, but the resulting cellules...

Fissure {F}

Latin. fissum - to cleave.

A narrow opening - a sulcus. See Sulci.

Example:

Algae and Fungi by C. J. Alexopoulos & H. C. Bold.

...one or both valves may have a fissure or raphe.

Fjord, Fiord {H}(E)

Old Norse. fiorthr. (Norse. fjord)

Long narrow U-shaped coastal inlet usually representing the seaward edge of a glaciated valley that has been partially submerged.

Example:

Flabella {P}

Latin. flabellum - a fan.

A fan. Fan-shaped. Usually used to describe a group of frustules forming a fan-shaped colony.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(*Synedra pulchella*)

Frustules forming flabella.

Flabilliform {P}

Latin. flabellum - a fan.

Like a fan. Fan-shaped.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(*Gomphonitzshia* genus)

The frustules are sessile or stipitate, and in that case they grow flabilliform.

Flamiform {F}

Old French. flambe.

Having the appearance of a flame or flames. Most often used to describe something with the appearance of a candle flame but not always so, also being used to describe sinuous flame-like appearance.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(*Van Heurckiella* genus)

...and with a plumose flamiform structure.

Flandrian {O}

Geological stage representing the Post-Glacial, Recent Epoch.

Example:

Flashboards {P}{Hy}

A length of timber, concrete, or steel placed on the crest of a spillway to raise the retention water level but which may be quickly removed in the event of a flood by a tripping device, or by deliberately designed failure of the flashboard or its supports.

Example:

Flexuose {F}

Latin. flexum - to bend.

Full of windings and turnings, undulating.

Example:

Miocene and Pliocene Diatoms by W. W. Wornardt

(*Actinocyclus octonarius*)

...areolae are 7-10 in .01mm. radiating in flexuose lines from center,...

Flexure {F}

Latin. flexum - to bend.

The curving, bending or twisting of a surface. In some cases a flexure is the bending of a surface one way then later the other.

Example:

Pritchard's Infusoria (*Navicula undulata*)

...each surface having four flexures, as shown...

Floating aquatic plants {H}

Aquatic plants that float on or just below the surface of the water. May refer to marine or freshwater plants including algae.

Example:

Floc {Hy}

A cluster of frazil particles. (see Flocculate)

Example:

Flocculate (Flocculation) {P}{E}

Latin. floccus - a lock or trifle.

To aggragate in tufts (normally referring to hair but in the case of diatoms it means hairy tufts) or cloudy masses.

Example:

Littoral Diatoms of Chichester Harbour

by N. Ingram Hendey.

...species which live in "flocculate" colonies...

Flood plain {Hy}{O}{E}

The relatively level area of land bordering a stream channel and inundated during moderate to severe floods.

Example:

Flood tide {P}

Incoming tide or rising tide in the tidal cycle (cf ebb tide).

Example:

Flora {P}

Latin. Flora - Goddess of Flowers.

The plant life of a given region (cf fauna, biota) or geological period.

Example:

Floristics {P}

Latin. Flora - Goddess of Flowers.

The study of plants (floras) (cf phytogeography).

Example:

Flotsam {H}

Anglo-French. floteson - to float.

Debris floating at sea surface or washed onshore, usually derived from the wreckage of a vessel or lost from a vessel at sea (cf jetsam).

Example:

Fluting {F}

Old French. fleute.

A groove.

Example:

Pritchard's Infusoria

(*Navicula*)

...filling the cavities of the flutings, furrows or striae.

Fluvial {P}{Hy}{O}{E}

Latin. fluvius - a river.

Referring to rivers, streams or river valley ecosystems (cf rhithron).

Example:

Fluvial deposit {Hy}

A sedimentary deposit consisting of material transported by suspension or laid down by a river or stream.

Example:

Fluviatile {H}

Latin. fluvius - a river.

Lotic (qv); inhabiting rivers and streams (cf rhithron).

Example:

Fluvio-glacial {O}

Pertaining to glacial rivers.

Example:

Fold {F}

Old English. falden - to fold.

This word is usually used to describe 'a crease' upon the valve surface. It may also, however, be used to describe an area where the silica is turned and doubled.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.

(*Amphiprora plicata*)

The rectangular space joining the two valves is marked with faint vertical lines or folds; and the valves...

Food chain {O}

Sequence of organisms in which each is food for the next member in the sequence

Example:

Food web {O}

Complex of interacting food chains; all the feeding relations of a community taken together; includes production, consumption, decomposition, and the flow of energy

Example:

Foot Pole {F}

Old English. fot. plus Latin. polus:Greek. polos - pivot, axis.

The pole of (point at which) a frustule is attached to the substratum, usually the narrower pole in a Heteropolar diatom. See Also Basal Pole.

Example:

Foot-Stalk {F}

Old English. fot. plus Old English. stalu.

See Pedicle.

Example:

Pritchard's Infusoria
(*Striatella*)

They are attached obliquely, by one extremity, to a short pedicle, or foot-stalk, and are developed in the form of little banners...

Footprint {O}

The amount of geographical space covered by an object. E.g. The sediment footprint is the area over which suspended sediment settles out of the sediment plume.

Example:

Foramina (pl.), Foramen (sing.) {F}

Latin. foramen - to pierce.

Pierced with small holes, porous.

Example:

Synopsis of the British Diatomaceae by W. Smith.

I have employed the term "Foramina", in reference to these perforations in the siliceous epiderm...

Foraminiferan ooze {P}

A calcareous deepsea sediment in which 30% or more of the material is composed of the tests of foraminifera.

Example:

Forebay {H}{Hy}

The water behind (upstream) of the dam.

Example:

Fork {F}

Latin. furca.

Dividing into prongs or branches.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.

(*Chaetoceros furca*)

...so that the basal part is only a single bristle, which forks at its second third.

Fossil {P}

Latin. fossilis - to dig.

A relic or trace of a former living thing dug from the earth.

Example:

New Species of Fossil or Pelagic Marine Diatoms
by J. Brun. Trans. J. W. Barker.

Free Floating {H}

Old English. freo. plus Old English. flotian - to float.

Meaning solitary and within the water column.

Example:

A Treatise on the British Freshwater Algae
by G.S. West & F.E. Fritsch.

(*Gyrosigma*)

Frustules solitary, free-floating, generally straight...

Freshet {E}

A flow of fresh water.

Example:

Freshwater {H}{Hy}

Water having a salinity less than 0.5 ppt.

Water that contains less than 1,000 milligrams per liter of dissolved solids.

Example:

Fringe {F}

Old French. frenge.

A border of any description may be termed 'the fringe'. Also used to denote a border with a serrated or hair-like contour.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.

(*Biddulphia regia*)

A fringe or membranous ridge occurs at the anterior and posterior ends...

Fringing reef {H}

Geological structure, generally of biological origin (usually a coral reef (qv)) along the border of a land mass (continent or island), lacking a lagoon or substantially so.

Example:

Fronds, Frondose {P}

Latin. frondis - a leaf.

A term given to a colony of diatoms that are anchored to the substrate and form a fan-like structure. As in *Licmophora*.

Example:

Notes on Diatoms by F.B. Taylor

31 - ...or are enclosed in a gelatinous frond or investment, growing in some cases in the form of a miniature plant...

Front View {F}

Latin. frontis - the forehead. plus French. vue - see.

See Views.

Example:

Notes on Diatoms by F.B. Taylor

201 - ...and the earlier English observers speak of the front view, when the organism presents the hoop or girdle to the observer...

Frustule {F}

Latin. frustum - A piece, bit (possibly) else frustulentus - full of small pieces.

An entire siliceous diatom 'case'. Two valves plus girdle bands.

Example:

H.M.S. Challenger - Report on the Diatomaceae (*Diatoma rhombicum*)

Frustules small, about .0006 in length.

Frustule Face {F}

Latin. frustum - A piece, bit (possibly) else frustulentus - full of small pieces. Plus Latin facies - form, face.

See Valve Face.

Example:

Fruticose {G}

Latin. frutex - a shrub.

Shrub-like.

Example:

Pritchard's Infusoria (*Naunema arbuscula*)

...numerous and dense within erect fruticose tubes.

Fucoxanthin {P}

A brown caretonoid pigment used in photosynthesis. This is generally the pigment that gives diatoms their brown coloration.

Example:

Photosynthetic Enhancement in the Diatom *Phaeodactylum tricornutum* (J. E. Mann) [1968]

Largely because of the efficiency of fucoxanthin the diatoms have a pigment...

Fultoportula {F}

In combination. Latin. fultus - part. Latin. portula - a small gate or port.

Fibril-secreting organelles often position around the valve mantle. They differ from rimoportulae because they have satellite pores while the rimoportulae do not.

Fultoportulae and rimoportulae usually require an SEM to be observed.

Example:

Diatoms from the South China Seas
by Dickman, Hodgkiss, Cheng & Gao.
(Glossary Entry)

Fundamental niche {P}{E}

Entire set of optimal conditions under which an organism is able to live and reproduce, in which the organism faces no negative coactive effects and in which the physical environment is optimal (cf realised niche).

Example:

Long-term Impacts of Changing Land-use Practices on Water Quality and Phytoplankton Assemblages in the Neuse Estuary Ecosystem, North Carolina (M. B. Rothenberger) [2007]
Hutchinson also described the "realized niche," which corresponds to a smaller hypervolume because competition and other interactions may exclude species from some parts of the fundamental niche.

Furcate {F}

Latin. furca - fork.

Forked.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.

(*Dicladia*)

...furnished with horns, more or less elongated, often ramous or furcate.

Furiotile {H}

Pertaining to any partially disjunct body of water that connects with the main body only during high water.

Example:

Furrow {F}

Old English. furh.

A groove or wrinkle. See also Suture.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.

(*Amphora cymbifera*)

...appear to be separated by furrows, and in a certain focus these furrows may be seen marked by lines...

Fusiform {G}

Latin. fusus - a spindle.

Spindle or cigar shaped.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.

(*Cylindrotheca* genus)

Frustules fusiform, furnished with 2 or 3 lines...

Fused {F}

Latin. fusum - to melt.

To blend or unite.

Example:

A Treatise on the British Freshwater Algae

by G.S. West & F.E. Fritsch.

(*Denticula*)

...the transverse septa are fused with the edges of the perforations in the adjacent longitudinal septum;...

G

Gaining stream {Hy}

A stream or reach of a stream whose flow is being increased by inflow of groundwater.
Example:

Gallert-poren {F}

German.

Example:

Notes on Diatoms by F.B. Taylor

89 - ...mucilage is secreted by special pores (gallert-poren), which form...

Gallery {Hy}{H}

A passageway within the body of a dam or abutment.
Example:

Gamete {P}

Greek. gametes - husband. gamete - wife.

An egg-cell or a sperm-cell.

Example:

A Treatise on the British Freshwater Algae

by G.S. West & F.E. Fritsch.

...and the undifferentiated gametes fuse in pairs to form two auxospores.

Gate {Hy}{H}

A device in which a leaf or member is moved across the waterway from an external position to control or stop flow. There are many different kinds of gates used on a dam. Some include: Bulkhead, Crest (or Spillway), Emergency, Fixed Wheel, Flap, Flood, Guard, Outlet, Radial, Regulating, and Slide Gates.

Example:

Gelatine {F}

Italian. gelata - jelly.

Synonymous with Gelatinous. This word has only been seen once in the following example.

Example:

Pritchard's Infusoria

(*Frustulia appendiculata*)

...they are scattered through an amorphous gelatine.

Gelatinous {P}

Italian. gelata - jelly.

Resembling or formed into a thin jelly. Used when describing diatom masses in their living state.

Example:

Synopsis of the British Diatomaceae by W. Smith.

In others, again, it is enclosed with multitudes of its confreres, in a gelatinous or membranaceous thallus...

Gelly {P}

See Gelatinous.

Geminate {F}

Latin. geminus - a twin.

In pairs.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.

(*Achnanthes* genus)

Frustules geniculate in gordle view; individuals solitary, geminate, or united into bands.

Gemmae {F}

Latin. gemma - a bud.

A small body capable of forming a new individual.

Example:

Pritchard's Infusoria

(*Echinella flabellata*)

...if the fan-shaped bodies separate from it, does not evolve new bodies in the form of gemmae, but disappears.

Gemmiparous

Latin. gemma - a bud.

Reproducing by gemmae (a small multicellular body)

Example:

Synopsis of the British Diatomaceae by W. Smith.

(Introduction)

...in which the cells cohere after gemmiparous increase...

Geniculation, Geniculate {F}

Latin. geniculum - a little knee.

Joints. Usually referring to the points t which rays meet or diverge.

Example:

Miocene and Pliocene Diatoms by W. W. Wornardt

(*Asteromphalus arachne*)

The rays may be simple and the geniculations are not regular.

Genuflexed {F}

In combination. Latin. genu - the knee. Latin. flexum - to bend.

See Geniculations.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.

(*Cocconeis* genus)

Frustules arched or genuflexed, living as a...

Genus {P}

Latin. genus - kind.

A category (qv) for a taxon including one species or a group of species, of common phylogenetic origin, separated from related similar units (genera) by a decided gap, the gap being in inverse ratio to the size of the unit (genus) (sometimes).

Example:

Geostrophic current (flow) {P}

A macroscale (qv) current in the ocean or atmosphere that is the product of balance between gravitational forces (the pressure field) and the Earth's rotation (the Coriolis Effect). The geostrophic approximation ignores friction (as negligible) in the calculation of such currents.

Example:

Germ {F}

Latin. germen.

A rudimentary form. As in Zygote.

Example:

H.M.S. Challenger - Report on the Diatomaceae
(*Asteromphallus challengeriensis*)

...and simultaneous development of two germs which have combined to form a single frustule.

Ghost Striae {F}

Old English. gast. plus Latin. stria - a furrow, groove or channel.

A faint striate line.

Example:

The Morphology of the Diatom Frustule
by H.G. Barber & E.Y. Haworth Ghost striae (the faint continuation of the striae across the valve).

Gibbous {G}

Latin. gibba - a hunch on the back; gibber - hump-backed; gibbus - hunched, humped.

Inflated at its centre.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
(*Cymbella tumidula*)

Dorsal margin very arcuate; ventral margin straight or slightly gibbous at the median portion.

Girdle {F}

Old English. gyrdel.

Bands of silica that link the two valves of a frustule. (See Also Connecting Band, Epicingulum, Hypocingulum, Hoop)

Example:

Diatoms of British Coastal Plankton by J. B. Sykes.
Girdle up to two times wider on one side of the cell...

Girdle Band {F}

Old English. gyrdel. plus Middle English. bande.

See Girdle.

Example:

The Morphology of the Diatom Frustule
by H.G. Barber & E.Y. Haworth (Tetracyclus)
Extension of the girdle band forms an internal septum.

Girdle View {M}

Old English. gyrdel.

A side on view of a frustule, usually the larger valve should be uppermost but most modern texts don't actually seem to care one way or the other. Connecting girdles may

or may not be apparent but the junction between the two frustules should be visible.

Example:

Diatoms of British Coastal Plankton by J. B. Sykes.

...length never more than twice width in girdle view...

Girdle Side {F}

Old English. gyrdel.

Unclear.

Example:

Freshwater Biology by Ward & Whipple.

(Key - Amphora)

...girdle side elliptical or oval.

Girdle View {F}

The term used when viewing a frustule or valve from the side (not looking at the entire valve face). There are two 'girdle views', the narrow girdle view and the broad girdle view. Girdle view alone is usually used to infer 'broad girdle view'. See Narrow girdle view and Broad girdle view.

Sometimes also called the Sagittal view or the Front view. However, take care as older texts use the term Front view to mean something else. See also Views.

Example:

Rines, J.E.B. & P.E. Hargraves - The Chaetoceros

- Bibliotheca Phycologica (79)

Girdle Zone {F}

Old English. gyrdel.

The area of the valve (normally the side walls) to which are attached the girdle bands.

The term may be used to encompass this connecting zone and the bands themselves.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.

(*Eupodiscus argus*)

Girdle zone with many ring-like intercalary bands.

Glandular {F}

Old French. glandre.

Possibly - shaped like an acorn.

Example:

Report on the Irish Diatomaceae by E. O'Meara.

(*Odontidium elegans*)

...with large glandular expansions at the ends of the costae...

Globigerina Ooze {P}

A deep sea deposit comprised mainly of shells from the foraminifera genus

Globigerina. Globigerina - say GLOBIJARINA - is a genus of foraminiferas with a calcareous shell of globose chambers arranged in a spiral.

Example:

Globose, Globular, Globe {G}

Latin. globus.

Shaped like a globe.

Example:

Diatoms of British Coastal Plankton by J. B. Sykes.

Cell globular with a stringly rigid outline.

Golden-Brown Algae {P}

Algal groups with golden-brown pigmentation. Generally used to describe the Diatoms.

Example:

Gomphonemoid {G}

In combination. Greek. gomphos - a wedge/or/a peg, and Greek. nema - a filament or thread.

A filament of wedge-shaped forms

Gomphonema shaped.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.

(Reichelta genus)

Valve lanceolate, slightly gomphonemoid simulating...

Gonioid

Greek. gonia - an angle.

Angled.

Example:

Diatoms of the British Coastal Waters by N. I. Hendey

p. 6

Gradation {F}

Uncertain.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.

(*Navicula exilis*)

Striation, both in structure and direction, analogous to that of *N. serians*, to which it is allied by infinitesimal gradation.

Gradation {E}

The growth and decline of a population. Also a geology term for land leveling by deposition and erosion.

Example:

Granules, Granular {F}

Latin. granulum - diminutive of granum - grain.

A name given to coarse structures on the surface of the frustules. Used quite a lot in the late 19th century.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.

(*Cymbella cistula*)

...the dilated portion showing from 2 to 5 isolated granules;...

Gregarious {H}

Latin. gregarius - of or belonging to a flock or herd.

In a loose assemblage but not held together.

Example:

Gridiron {F}

Synonymous with Craticular.

Example:

Notes on Diatoms by F.B. Taylor

103 - ...was without these gridiron plates...

Groove {F}

See Suture.

Example:

Rines, J.E.B. & P.E. Hargraves - The Chaetoceros

- Bibliotheca Phycologica (79)

Ground water {Hy}

In the broadest sense, all subsurface water; more commonly that part of the subsurface water in the saturated zone.

Example:

Guano {P}

Spanish. guano - dung.

The dung of sea-fowl.

Example:

Synopsis of the British Diatomaceae by W. Smith.

One of the most singular instances of the preservation of Diatomaceous forms occurs in regard to Guano, so largely imported for manure from Peru and Africa.

Guilloche-like {F}

Origin Unknown - French.

Ornamentation composed of interlaced curves enclosing circles.

Example:

H.M.S. Challenger - Report on the Diatomaceae

(Hyalodiscus subtilis)

...in the guilloche-like disposal of the granules...

Gyre {P}{O}{E}

Greek. gyros - a circle or ring.

Circular or spiral motion of water, used to describe a semienclosed current system, such as the macroscale (qv) subtropical anticyclonic (qv) gyres or such cyclonic (qv) gyres as occur in regions such as the Pacific Subarctic.

Example:

H

Habitat {H}{Hy}{O}{E}

Latin. dwells.

Ecology: Living place of an organism, defined by its location and physical, chemical and biological properties.

The part of the physical environment where plants and animals live.

Example:

Hadal zone {H}

That part of the ocean that lies in the deep ocean trenches below the general (abyssal) level of the deep ocean floor.

Example:

Hadopelagic {H}

Pelagic in depths greater than 6000 m (cf hadal zone; ultra-abyssopelagic).

Example:

Hair, Hairy {F}

Old English. haer.

A small fine outgrowth.

See Also Hirsute.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(*Bacteriastrum hyalinum*)

Terminal bristles...those of the internal cells have the bifurcations parallel to the chain axis...thus giving the cells a hairy appearance.

Halo {F}

Greek. halos - a threshing floor, a disc.

A ring of light, but in the case of the diatom valve this describes a ring of hyaline material that is bright in the microscopical view.

Example:

Simbirsk Diatoms by Otto N. Witt
(*Aulacodiscus Archangelskianus*)

The processes are surrounded by an always circular smooth halo out of which the radial furrows spring;...

Halocline {P}{O}{E}

Greek. hals - salt.

Any zone of rapid change of salinity, typically with depth as the principal independent axis.

Example:

Halodrymium {H}

Greek. hals - salt.

A mangrove (mangal) community.

Example:

Halophilic {H}

Greek. hals - salt.

Thriving in (tolerant of) high salt concentrations in the environment.

Example:

Halophilus {H}{P}

Stimulated by the presence of some salt.

Example:

Halophobic {H}{P}

Intolerant of small amounts of salt.

Example:

Diatoms in Eastern Australia by Neils Foged.
(*Eunotia exigua*)

Halophyte {P}{E}

Greek. hals - salt, Greek. phyton - a plant.

Plant adapted morphologically and physiologically to grow in markedly saline environments, eg *Rhizophora*, *Salicornia*, *Spartina*.

Example:

Halosere {P}

Greek. hals - salt.

Characteristic sequence of communities associated with developmental stages in plant succession in salt marshes.

Example:

Hamulous {F}

Latin. hamulus - a small hook.

Bearing small hooks.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
(*Grammatophora* genus)

Septa undulated or hamulous with only a single median opening.

Haploid {P}{E}

In combination. Greek. haploos - single. Greek. eidos - form.

A nucleus or nuclear element that contains only one representative of each of the chromosome complement.

Example:

The British Freshwater Algae
by G.S. West & F.E. Fritsch

...the ordinary phase, the gametophyte (haploid generation)...

Hardness {Hy}

A property of water that causes the formation of an insoluble residue when the water is used with soap and a scale in vessels in which water has been allowed to evaporate. It is due primarily to the presence of ions of calcium and magnesium. Generally expressed as milligrams per liter as calcium carbonate (CaCO₃). A general hardness scale follows:

Example:

Hastate {G}

Latin. hastatus - a spear.

Being spearhead shaped when in valve view

Example:

Head {Hy}

The difference between the pool height and tailwater height. Usually expressed in feet of head, or in lbs./sq. inch.

Example:

Head Pole {F}

Old English. hefod. plus Latin. polus:Greek. polos - pivot, axis.

The term is applied to the pole of a heteropolar frustule that is not or would not be attached to the substratum. This pole is usually larger or wider than the Basal or Foot Pole.

Example:

Head Race {H}{Hy}

A channel which directs water to a water wheel; a forebay.

Example:

Headwater basin {Hy}{H}

A basin at the headwaters of a river. All discharge of the river at this point is developed within the basin.

Example:

Headwaters {Hy}{E}

The source and upper part of a stream.

Example:

Heart-Shaped {F}

Old English. heorte.

Shaped as the heart in a deck of cards.

Example:

Pritchard's Infusoria

(*Echinella paradoxa*)

...the lorica is wedge-shaped or heart-shaped, and is tridentated...

Helic {H}

Ecology: Pertaining to marshes or marsh communities. See also Palustrine.

Example:

Helical {P}

Greek. helix - a spiral.

Forming a screw-shaped coil (Helix)

Example:

The Morphology of the Diatom Frustule

by H.G. Barber & E.Y. Haworth Helical chain - spirally twisted bands.

Heliotropic {P}

Greek. helios - the sun.

See phototropic.

Example:

Helix {P}

Greek. helix - a spiral.

A screw-shaped coil.

Example:

Portfolio of Drawings etc. by Thomas Bolton.

(*Asterionella formosa*)

...but appear to form a helix and often are continued on for a second whorl making about...

Helictoglossa (sing.), Helictoglossae (pl.) {F}

This is a relatively new term that is used for the internal thickenings found at the polar raphe ending. (The term polar is sometimes used instead of terminal apex and can be confusing)

Example:

Hemicyclical

In combination. Greek. hemi - half. Greek. kyklos - a wheel.

Having some parts in whorls and some in spirals.

Example:

Diatoms of the British Coastal Waters by N. I. Hendey
p. 12 Hemidiscus

Hemiplankton {P}

Greek. hemi - half.

See Meroplankton.

Example:

Hemispherical {G}

Greek. hemisphairion.

Half a sphere.

Example:

Simbirsk Diatoms by Otto N. Witt
(*Gyrodiscus vortex*)

Shield circular, almost hemispherical, arched strongly,...

Heterograde {P}

Greek. heteros - other.

A non-uniform gradient of a factor in the water column, eg an oxygen minimum layer.

Example:

Heteropolar {G}

In combination. Greek. heteros - other, one or other. Latin. polus and Greek. polos - pivot, axis.

A frustule whose apices are different sizes or different shapes (asymmetrical along the transverse axis).

Example:

The Morphology of the Diatom Frustule
by H.G. Barber & E.Y. Haworth (Peronia)
Frustules heteropolar in both views...

Heterotrophic {P}{O}

Greek. heteros - other, Greek. trophe - livelihood.

Pertaining to organisms requiring preformed organic compounds for food; unable to manufacture food from inorganic compounds

Example:

First account of apochlorotic diatoms from intertidal sand of a south Florida beach (M. V. Blackburn) [2009]
The ease with which these heterotrophic diatoms formed burrows suggests that they...

Heterovalvy, Heterovalvate {F}

In combination. Greek. heteros - other. Latin. valvae - leaves or folds.

The hypotheca and epitheca (lower and upper valves) are not identical.

Example:

Diatoms from the South China Seas
by Dickman, Hodgkiss, Cheng & Gao.
(Glossary Entry)

Hexagon(al) {F}

In combination. Greek. hex - six. Greek. gramma - figure.

A feature with six sides and six angles.

Example:

Simbirsk Diatoms by Otto N. Witt
(*Triceratium kinkerianum*)
...rather rare form distinguished by the radial rows of
dots in the hexagonal middle plate.

Hidroplankton {P}

Greek. hidros - sweat,

Plankton (qv) that achieve buoyancy by means of surface secretions.

Example:

Hirsute {F}

Latin. hirsus - hairy.

Hairy. Having many fine outgrowths.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(*Peragalloa* genus)
...valves furnished with two long horns, more or less
spinous or hirsute.

Holdfast {P}{E}

In combination. Old English. haldan. Old English. faest..

Any organ, structure or material enabling attachment to a substratum. e.g. specialised basal parts of cells or filaments and mucilage.

Example:

Freshwater Algae - Their Microscopic World Explored
by H. Canter-Lund & J.W.G. Lund.

Holobenthic {H}

Greek. holos - whole,

An organism that remains benthic throughout its entire life cycle.

Example:

Role of sinking in diatom life-history cycles: ecological,
evolutionary and geological significance (V. S. Smetacek)
[1985]

In diatoms, however, all the intermediate stages between
the holoplanktonic and holobenthic mode of existence...

Holocene (Recent) {P}{O}

In combination. Greek. holos - whole. Greek. kainos - recent.

The post-Pleistocene geological epoch characterised by fluctuating but generally moderate climates, rising sea levels, and modern animal species; dating to

approximately 11,000 years before present, to the present.

Example:

Holopelagic {H}

Greek. holos - whole,

Organisms that remain pelagic throughout their entire life cycle (cf meropelagic).

Example:

Holophyletic {H}

Greek. holos - whole,

See Monophyletic.

Example:

Holophytic {P}

In combination. Greek. holos - whole. Greek - phyton - a plant.

Obtaining nutrient in the same way a plant does.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(Nutrition)

Nutrition is holophytic, that is to say, the diatom feeds as a typical plant...

Holoplankton (Holoplanktonic) {H}{O}{P}

In combination. Greek. holos - whole. Greek. planktos - wandering.

Organisms which are permanent (throughout their lifetime) members of the plankton (qv) (cf meroplankton).

Example:

(1) Role of sinking in diatom life-history cycles: ecological, evolutionary and geological significance (V. S. Smetacek) [1985]

In diatoms, however, all the intermediate stages between the holoplanktonic and mode of existence...

(2) The Planktonic Diatoms of Northern Seas by M.V. Lebour.

(Habits)

...and those which are truly planktonic are called holoplanktonic.

Holotype {F}

In combination. Greek. holos - whole. Greek. typos - model.

Example:

Some Fossil Diatoms from Barbados
by G. Dallas Hanna & A.L. Brigger

(*Helminthopsis sokoli*)

Length of holotype, .2314mm; width, .0172mm.

Homogenous (Homogeneity) {P}{Hy}

In combination. Greek. homos - same. Greek. genos - kind.

Being of the same nature and structure throughout.

Example:

Notes on Diatoms by F.B. Taylor

123 - ...but the beds are less regular and homogenous, and are...

Homoiosmotic {P}

Greek. homos - same,

Pertaining to organisms that are capable of regulation, to at least some degree, of internal salt/fluid content relative to the external milieu over the range of conditions specified.

Example:

Homologous, Homologues {F}{P}

Late Latin. homologare - to agree.

Being of the same structure throughout. - Homologues - being the same structure as.

Example:

Synopsis of the British Diatomaceae by W. Smith.

(*Coscinodiscus* genus)

...furnished with a projecting fringe of silex, the homologues of the spinous processes in *C. eccentricus*.

Homonym {P}

Name applied to an organism that has also been used for a different organism (typically when this happens the latter name is deemed invalid).

Example:

Morphology and ecology of the planktonic diatom *Palmerina hardmaniana* (Greville) Hasle in southern Brazil (M. Garcia) [2008]

The generic name *Palmerina* was suggested by Hasle (1995) as a substitute to *Palmeria* used by Greville in 1865 to describe the diatom, because the homonym *Palmeria* F. von Mueller was used in 1864 to describe an angiosperm of the family Monimiaceae.

Homopolar {F}

In combination. homos - same. Latin. polus and Greek. polos - pivot, axis.

When both valve ends are the same size the diatom is referred to as either isopolar or homopolar.

Example:

Diatoms from the South China Seas
by Dickman, Hodgkiss, Cheng & Gao.
(Glossary Entry)

Homovalvar {F}

In combination. homos - same. Latin. valvae - leaves or folds.

When the upper and lower valves of the frustule are identical mirror images of one another the diatom is referred to as homovalvar.

Example:

Diatoms from the South China Seas
by Dickman, Hodgkiss, Cheng & Gao.
(Glossary Entry)

Honeycomb {F}

In combination. Old English. hunig. Old English. cambe.

A pattern of hexagons (six sided figures) placed together such that there are no spaces between all the adjacent hexagons.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.

(*Coscinodiscus concavus*)

...hexagonal cells arranged as in a honeycomb.

Hood {F}

Old English. hod.

An overhanging or protective layer.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.

(*Rhizosolenia* genus)

...valves asymmetrical, generally terminating in a hood (clyptra) surmounted by a bristle...

Hooked, Hook-shaped {F}

Old English. hop.

A line sharply bent close to its termination. A term usually applied to the terminal ends of a raphe.

Example:

Marine Diatoms of the Philippine Islands by A. Mann

(*Pleurosigma hamuliferum*)

This species with the curiously hooked raphe was first found in...

Hoop {F}

Old English. hop.

Another name for the girdle band.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.

(*Schroderella* genus)

Many intercalary bands forming incomplete hoops.

Horn {F}

Old English. horn.

An elongated process which does not taper to any significant degree.

Example:

Synopsis of the British Diatomaceae by W. Smith.

(*Eupodiscus* genus)

...and in the presence of horn-like processes of the disc...

Hour-glass {F}

Greek. hora.

Constricted about the middle with two pear shaped lobes.

Example:

Report on the Irish Diatomaceae by E. O'Meara.

(*Mastogloia closeii*)

...loculi...shaped somewhat like an hour-glass with pointed ends...

Hyaline {F}

Latin. hyalus - glass.

A region of thickened silica. Often bearing no features but not necessarily so.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.

(*Navicula cancellata*)

Rahpe surrounded by a narrow hyaline zone, somewhat enlarged near the central nodule.

Hydatophytium (Hydrophyte) {H}{E}

Greek. hydor - water, Greek. phyton - plant.

A submerged plant community.

Example:

Hydrated silica (Hydrated silicon dioxide, Silicon Dioxide)

Greek. hydor - water. plus Latin silex - flint.

Silica in chemically combined with water.

Example:

Diatoms of the British Coastal Waters by N. I. Hendey.

p3

Hydric {H}

Greek. hydor - water,

A wet habitat or environment (cf xeric, mesic).

Example:

Stability of diatom composition in a variable lake environment (P. Miretzky) [2002]

...where the hydric soils are rich in organic matter...

Hydric soil {Hy}

Soil that is wet long enough to periodically produce anaerobic conditions, thereby influencing the growth of plants.

Example:

Stability of diatom composition in a variable lake environment (P. Miretzky) [2002]

...where the hydric soils are rich in organic matter...

Hydrochemical front {P}

An oceanic boundary (qv) region across which occur relatively sharp (change in value / change in distance) gradients in abiotic (qv) factors, often associated with a marked transition in oceanic community constituency and structure. For example the marked hydrochemical front at 10° S in the Indian Ocean.

Example:

Management of Demersal Fisheries Resources of the Southern Indian Ocean [2006]

This biome extends from the hydrochemical front at 10-15 °S to the Sub-tropical...

Hydrochoric {P}

Greek. hydor - water, Greek. chorein - spread about.

Dispersed by the agency of water, used primarily of freshwater lotic (qv) habitats (cf advection).

Example:

Hydrograph {Hy}

Greek. hydor - water,

Graph showing variation of water elevation, velocity, streamflow, or other property of water with respect to time.

Also Natural Hydrograph – representing the seasonal flows of a water body.

Example :

Hydrography {P}{O}

Greek. hydor - water, Greek. graphein - to write.

Oceanography and Limnology: A branch of physical oceanography with emphasis on ocean currents, especially as they affect navigation, including preparation of navigation charts and of current and tide tables. The term is sometimes used more generally to refer to the study of ocean currents and associated phenomena per se.

Example :

Hydrologic cycle {Hy}

Greek. hydor - water,

The circulation of water from the sea, through the atmosphere, to the land, and thence back to the sea by overland and subterranean routes.

Example :

Hydrology {P}{Hy}{O}

Greek. hydor - water,

Study of the flow of water in various states through the terrestrial and atmospheric environments and of interchange with sources and sinks in the sea.

Example :

Hydrophyte {P}{Hy}

Greek. hydor - water, Greek. phyton - plant.

Plant that is adapted morphologically and/or physiologically to grow in water or very wet environments, used primarily of freshwater habitats.

Example :

Hydrosphere {Hy}

Greek. hydor - water,

The region that includes all the earth's liquid water, frozen water, floating ice, frozen upper layer of soil, and the small amounts of water vapor in the earth's atmosphere.

Example :

Hydrostatic pressure (Hydrostatic Head) {Hy}

Greek. hydor - water,

The pressure exerted by the water at any given point in a body of water at rest.

Example :

Hydrotaxis {P}

Greek. hydor - water, Greek. taxis - arrangement.

An orientational or movement response cued by the presence of water or moisture.

Example :

Hygrophyte {E}

Organisms that live in moist places (creeping spearworts).

Example :

Hypactile {H}

Pertains to that part of the littoral zone exposed by the tide for less than one-quarter of

the tidal cycle.

Example:

Hyperbenthic {H}

Greek. hyper - over,

Living above but close to the substratum (suprabenthic) (cf epibenthic, endobenthic, engibenthic).

Example:

Hypersaline {H}

Greek. hyper - over,

Having a high salinity, well in excess of normal sea water; typical of isolated bodies of seawater with high evaporation rates (lacking or with restricted free access to the sea).

Example:

Hypolimnion {H}

Greek. hypo - under,

Lower, cooler, noncirculating water in a thermally stratified temperate lake in summer (cf epilimnion).

Example:

Hyponeuston {P}

Greek. hypo - under,

Organisms living immediately below the surface film of a body of water (cf epineuston).

Example:

Hypospore {P}

A thick-walled resting cyst.

Hypocaust {F}

Greek. hypocausten. - a combination of two words but in this context the name is taken from the structure of the Roman hypocaust - underfloor heating system.

Vertical separations between tube-like areolae.

Example:

Diatoms from the South China Seas
by Dickman, Hodgkiss, Cheng & Gao.

(Glossary Entry)

Hypocingulum {F}

In combination. Latin. hypo - from below. Latin. cingulum - a girdle or belt.

Girdle elements that are associated with the smaller (younger) valve.

Example:

Diatoms from the South China Seas
by Dickman, Hodgkiss, Cheng & Gao.

(Glossary Entry)

Hypocingulum - The girdle is located between the two valve faces and is subdivided into two overlapping portions; the epicingulum and the hypocingulum. The epivalve and the epicingulum comprise the epitheca and the hypovalve and the hypo cingulum comprise the hypotheca.

Hypolimnion {P}

In combination. Greek. hypo - under. Greek. limne - a pool or marsh.

The lowest layer of water, defined by its temperature, below the Thermocline.

See also Epilimnion, Metalimnion, Thermocline.

Example:

Freshwater Algae -their Microscopic World Explored
by H. Canter-Lund & J.W.G. Lund

pg18 - Light penetration at best is only likely to permit
significant photosynthesis as far down as the upper part
of the hypolimnion.

Hypotheca {F}

In combination. Latin. hypo - from below. Latin theca - that in which anything is enclosed, an envelope, cover, case, etc.

The name given to the combination of the Hypocingulum and the Hypovalve (the younger elements of a frustule)

Example:

Algae and Fungi by C. J. Alexopoulos & H. C. Bold.

Each diatom is enclosed by two slightly overlapping walls
or valves....the larger is the epitheca and the smaller,
the hypotheca.

Hypotype {F}

In combination. Greek. hypo - under. Greek. typos - model.

Example:

Some Fossil Diatoms from Barbados
by G. Dallas Hanna & A.L. Brigger

(*Kittonia gigantea*)

Hypotype no. 3522,... from Chimborazo...

Hypovalve {F}

In combination. Latin. hypo - from below. Latin. valvae - leaves or folds.

The smaller (and younger) of the two valves of a frustule.

Example:

Diatoms from the South China Seas
by Dickman, Hodgkiss, Cheng & Gao.
(Glossary Entry)

Hypocingulum - The girdle is located between the two valve
faces and is subdivided into two overlapping portions; the
epicingulum and the hypocingulum. The epivalve and the
epicingulum comprise the epitheca and the hypovalve and
the hypo cingulum comprise the hypotheca.

Hypoxic (Hypoxia) {P}{E}

Greek. hypo - under,

Waters undersaturated (low) in dissolved oxygen content, as in oceanic oxygen
minimum layers (cf anoxic).

Example:

I

ICBN (International Code of Botanical Nomenclature)

See International Code of Botanical Nomenclature.

Example :

-idae

Suffix; ending of the name of a subclass in the botanical or of a family in the zoological literature.

Example :

-inae

Suffix; the ending of the name of a subtribe in botanical nomenclature and of a subfamily in zoological nomenclature.

Example :

-ineae

Suffix; the ending of the name of a suborder in botanical nomenclature.

Example :

Imbricate, Imbrication {G}

Latin. imbrex - a tile.

Overlapping.

Example :

(1) The Planktonic Diatoms of Northern Seas by M.V. Lebour. (*Rhizosolenia Shrubsolei*)

...with the corner pointing in such a way that they form an imbricating row on each side of the apex.

(2) A Treatise on the Diatomaceae by Henri Van Heurck. (*Rhizosolenia robusta*)

...imbrication confused, mucrones small...

Immobiles {P}

In combination. Latin. prefix im or in - not. Latin. mobilis - to move.

One of Mereschkowsky's division of diatoms based upon a diatoms ability to move.

See also Mobiles.

Example :

Notes on Diatoms by F.B. Taylor

96 - ...and the Immobiles the rest of the Pennatae and the Centricae.

Implicate {F}

In combination. Latin. in - in. Latin. plicare - to fold.

Entwined together. Wound around.

Example :

Report on the Irish Diatomaceae by E. O'Meara.

(*Schizonema crucigerum*)

...filaments implicate below, free above...

Inconspicuous {F}

In combination. Latin. in - not. Latin. con - together. Latin. specere - to look.

Easily overlooked. Not conspicuous.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.

(*Thalassiosira hyalina*)

...and a single row of inconspicuous spinulae.

Incrassate {F}

In combination. Latin. in - in. Latin. crassus - thick.

Thickened

Example:

The Diatomaceae of Philadelphia and Vicinity

by C.S. Boyer.

(*Grammatophora marina*)

Septum undulated near its origin and then straight,

incrassate at the end.

Incurved {F}

Latin. incurvare - to end in.

To curve inwards.

Example:

British Diatomaceae by Arthur Scott Donkin.

(*Navicula abrupta*)

...unstriated area narrow, incurved in the middle and at the extremities...

Indefinite {F}

In combination. Latin. in - not. Latin. de - to. Latin. finis - a limit.

Being without clearly defined outlines or limits. Also used to define a valve that has numerous internal diaphragms but is not in the process of self-division and no daughter cell is in evidence.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.

(*Navicula brevis*)

Central nodule indefinite; terminal nodules definite.

Index of Wetness {Hy}

The ratio of precipitation for a given year over the mean annual precipitation.

Example:

Index species {P}

(1) Ecology: Species characteristic of a particular community, ecosystem or habitat.

(2) Paleontology: Species characteristic of a particular rock unit or time zone.

Example:

Indian Ocean {H}

Third largest of the main oceans of the world. Area =73,443,000 km². The northern Indian Ocean is dominated by intense monsoonal wind fields which cause dramatic surface current changes.

Example:

Indicator species {P}{E}

A species indicative of a particular environmental regime, organismal assemblage or biogeographic area. Usually used in the ecological sense to indicate (serve as an index

of) a particular environmental regime.

Example:

Indicator sites {Hy}

Stream sampling sites located at outlets of drainage basins with relatively homogeneous land use and physiographic conditions; most indicator-site basins have drainage areas ranging from 20 to 200 square miles.

Example:

Indifferent {H}

In combination. Latin – in (as a negative). Latin. Differe – apart.

A term used in conjunction with an environmental description. Also sometimes used associated with a pH of 7.

Example:

Diatoms in Eastern Australia by Neils Foged.

(*Surirella tenuissima*)

Oligohalobous (indifferent), pH indifferent.

Indifferent species {P}

Species occurring in a given community but not showing strong fidelity (qv) to that community, occurring in one or more additional communities as well (cf accidental, exclusive, preferential, selective species).

Example:

Indurated {Hy}

Cemented, hardened, or a rocklike condition.

Example:

Inferior {F}

Latin. inferus - low.

Relating to the smaller of two features. Often the extremities. Sometimes the valves. See also Inferior Half, Inferior Portion, Inferior Third.

Example:

H.M.S. Challenger - Report on the Diatomaceae

(*Asterionella glacialis*)

...has its superior extremity somewhat swollen, although to a less extent than its inferior extremity.

Inferior Apex {F}

Latin. inferus - low.

The apex of the valve on the smaller section of the valve bisected across its middle at right angles to the apices.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.

(*Licmaphora communis*)

Valve obovate, pyriform, short, with inferior apex subacute;...

Inferior Half, Inferior Portion, Inferior Third {F}

Latin. inferus - low.

An area of the valve (half, portion, or third) on the smaller section of the valve bisected across its middle at right angles to the apices.

Example:

(2) A Treatise on the Diatomaceae by Henri Van Heurck.
(*Licmophora Dalmatica*)

Valve narrowly cuneate, acute at the inferior portion,...

(3) A Treatise on the Diatomaceae by Henri Van Heurck.
(*Licmophora gracilis*)

Valve clavate, abruptly attenuate at the inferior third;...

Inferior Valve {F}

Latin. inferior composition of inferus - low. plus Latin. valvae - leaves or folds.

The smaller valve, the younger valve.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
(*Cocconeis placentula*)

...;inferior valve furnished with an annulus...

Inflated {F}

In combination. Latin. in - into. Latin. flamma - a flame.

Swollen.

Example:

British Diatomaceae by Arthur Scott Donkin.

(*Navicula integra*)

Valve elliptical-lanceolate, slightly inflated in the middle and suddenly constricted into produced,...

Inflexion, Inflection, Inflexed, Inflected {F}

Latin. flexum - to bend.

Bent or turned. Normally bent inwards. Usually referring to the margins or to the raphe ends.

Example:

Pritchard's Infusoria (*Navicula arcus*)

...has a narrow, linear, curved, and smooth lorica, inflexed and umbilicated at the centre.

Influent {E}

A plant or animal that has an important effect on the biotic balance in a community.

Sometimes used to mean a species that moves into an ecosystem from outside.

Example:

Infralittoral {H}

Latin. infra - below,

Intertidal region exposed only at the lowest spring tides.

Example:

Offshore distribution patterns of the cyanobacterium *Trichodesmium erythraeum ehrenberg* and associated phyto- and bacterioplankton in the southern Atlantic coast (Paraná, Brazil) (A. Siqueira) [2006]

However, centric and pennate diatoms, *Anabaena* sp. and *Merismopedia* sp. were common between the infralittoral and the 15 m isobath.

Infundibuliform {F}{G}

In combination. Latin. in - in. Latin. fundere - to pour.

Funnel-shaped.

Example:

Diatoms from Russian Deposits

by J.W. Barker & S.H. Meakin.

(*Aulacodiscus erinaceus*)

Processes 4, small stout infundibuliform, in small clear circular areas...

Infusorial Earth {F}

Example:

H.M.S. Challenger - Report on the Diatomaceae

(*Coscinodiscus*)

...having first directed the attention of naturalists, geologists, and microscopists to the so-called Infusorial Earths, tripoli and other ...

Inland freshwater wetlands {Hy}

Swamps, marshes, and bogs found inland beyond the coastal saltwater wetlands.

Example:

Inland sea {H}

Extensive body of water that is largely or entirely surrounded by land, eg Black Sea, Baltic Sea, Caspian Sea (cf epeiric sea).

Example:

The diatoms and dinoflagellates of Hudson Bay (J.T. Anderson) [1981]

Hudson Bay is the largest inland sea in the world...

Inlet {H}

(1) A recess, such as a bay or cove, along a coast.

(2) A stream mouth or bay leading inland, as from the ocean; an estuary.

(3) A narrow passage of water, as between two islands.

Example:

A 91-year record of seasonal and interannual variability of diatoms from laminated sediments in Saanich Inlet, British Columbia (M. R. McQuoid) [1997]

The diatom species composition in Saanich Inlet has been described...

Inner Fissure {H}

Old English. in - composition of innera. plus Latin. fissum - to cleave.

See explanation in example.

Example:

The Algae - A review by G. W. Prescott.

The raphe or furrow, if seen in transverse section of the wall, would show a '<'-shaped groove. The upper arm of the '<' is called the outer fissure, the lower the inner fissure.

Inner Plate {F}

Old English. in - composition of inners. plus Old French. plate

Nearly always referring to Centric forms where the valve is constructed of two plates, which may become separated.

Example:

The Diatomaceae of Philadelphia and Vicinity by C.S. Boyer.

(*Aulacodiscus*)

...the other, radiating rows of circular granules with hyaline spaces intervening and closer near the border, forming the inner plate...

Inner Zone {F}

Old English. in - composition of inners. plus Latin. zona - a girdle.

Nearly always referring to Centric forms where the ornamentation of the valve face clearly distinguishes two zones, the inner (central) zone and the outer (peripheral) zone.

Example:

The Diatomaceae of Philadelphia and Vicinity by C.S. Boyer.

(*Pseudauliscus spinosus*)

The inner zone indistinctly reticulate with fine puncta...

Inoculum {P}

In combination. Latin. in - into. Latin. oculus - eye.

The introduction (or in this case the reintroduction) of a population.

Example:

Freshwater Algae - their Microscopic World Explored

by H. Canter-Lund & J.W.G. Lund

pg19 - ...they can be the inoculum for the next year's vernal (spring) algal maximum.

Insensibly {F}

In combination. Latin. in - not. Latin. sensus - to feel.

Almost imperceptably. Gradually.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.

(*Meridion circulare*)

...which terminate insensibly near the connecting zone.

Inshore {H}

General term for ocean regions in close proximity to land (cf offshore).

Example:

On the Rate of Diatom Growth (H. W. Harvey)

In general it appears that the growth of diatoms during the summer months in relatively shallow inshore waters is greater than in deeper waters out to sea...

Instantaneous discharge {Hy}

The volume of water that passes a point at a particular instant of time.

Example:

Intaglio {F}

A surface that is impressed. The opposite of Cameo.

Example:

Interannual {P}{O}

Latin. inter - between,

Pertaining to events that vary on a year-to-year basis, particularly seasonally-related events.

Example:

Intercalary, Intercal(l)ated {F}

In combination. Latin. inter - between. Latin. calare - to proclaim.

Inserted between the normal elements.

Example:

(1) The Planktonic Diatoms of Northern Seas by M.V. Lebour. (Coscinodiscus genus)

Intercalary bands, if present, usually without sculpture.

(2) A Treatise on the Diatomaceae by Henri van Heurck.

(Coscinodiscus centralis)

...new radial lines being intercalated as room is made...

Intercalary Bands, Intercalary Rings {F}

In combination. Latin. inter - between. Latin. calare - to proclaim. plus Middle English. band.

These are bands of silica that sit between the valve and the girdle band or between girdle bands. They may or may not exist and there may be a variable number. Where they fit with the valve they sometimes form a septum.

Example:

(1) The Planktonic Diatoms of Northern Seas by M.V.

Lebour. (Hyalodiscus stelliger)

Many narrow ring-like intercalary bands.

(2) Notes on Diatoms by F.B. Taylor 96 - The frustule of Rhizosolenia is built up of intercalary rings or lozenge-shaped imbricated scales...

Intercostal {F}

Latin. inter - between. plus Latin. costa - a rib, a side, a wall.

The areas between the costae on a valve.

Example:

New Species of Fossil or Pelagic Marine Diatoms

by J. Brun. Trans. J. W. Barker.

(Triceratium globuliferum)

Intercostal space furnished with wide flat beads,...

Interface {Hy}

The contact zone between two materials of different chemical or physical composition.

Example:

Interflow {Hy}

The lateral motion of water through the upper layers until it enters a stream channel.

This usually takes longer to reach stream channels than runoff. This also called subsurface storm flow.

Example:

Quaternary Paleocology of the Idaho National Engineering Laboratory, Snake River Plain, Idaho (R. C. Bright) [1982]
The presence of diatoms and sponge spicules in the interflow deposits...

Interfasciculate, Interfascicular {F}

Latin. inter - between. plus Latin. fasciculus - a small bundle, packet.

Used to describe the region between fascicles (a bundle or cluster of areolae) See Fascicle.

Example:

Miocene and Pliocene Diatoms by W. W. Wornardt
(Actinocyclus octonarius)

...double lines of radiation appear to divide valve into radial compartments due to the interfasciculate rows.

Interfrustular {F}

In combination. Latin. inter - between. Latin. frustum - A piece, bit (possibly) else frustulentus - full of small pieces.

Between frustules. Usually relating to the small apertures or spaces when frustules are joined together.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
(Chaetoceros paradoxum v. Eibenii)

Centre not raised, interfrustular apertures longly elliptic...

Intermediate water mass {H}

Water mass lying between a principal upper water mass or water masses (eg South Atlantic Central Water) and a deep water mass (or masses; eg North Atlantic Deep Water), such as Antarctic Intermediate Water.

Example:

Intermediate Zone {Hy}

The subsurface water zone below the root zone and above the capillary fringe.

Example:

Intermittent stream {Hy}

A stream that flows only when it receives water from rainfall runoff or springs, or from some surface source such as melting snow.

Example:

Environmental determinants of diatom assemblages along a North African wadi, the Kebir-East, North-East Algeria
(Nadjla Chaib et al) [2011]

Diatom communities of a North African intermittent stream.

Intermixed {F}

In combination. Latin. inter - among. Latin. miscere - to mix.

Mixed together. One type of feature being mixed between other features.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
(Cyclotella antiqua)

Valves with well-marked costae, intermixed with spines or coarse dots,...

Internal Valves {F}

These valves may be formed within the frustule but are not associated with cell division. They are morphologically similar to normal valves. A cell may form several such internal valves, though the reason for doing so is unclear.

Example:

Internal wave {P}

Wave that forms within a water column at the boundary interface between two water masses (layers) differing in density.

Example:

International Code of Botanical Nomenclature (ICBN)

The internationally adopted set of rules governing botanical nomenclature.

Interpolated {F}

In combination. Latin. inter - between. Latin. polire - to polish.

To be inserted between two features.

Example:

Marine Diatoms of the Philippine Islands by A. Mann
(Rhabdonema sutum)

...crossed by continuous lines which represent the series of septa that become interpolated between the two ends or valves of the frustule...

Interrupted {F}

In combination. Latin. inter - between. Latin. rumpere - to break.

A break in continuity.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.
(Navicula spectabilis)

...on each side a narrow, striated band, interrupted at the middle.

Interspaces {F}

In combination. Latin. prefix inter - between. French - espace.

Intervals between otherwise regular features.

Example:

H.M.S. Challenger - Report on the Diatomaceae
(Surirella grandiuscula)

There is a circlet of large canaliculi, which become a little shorter and narrower as they approach the inferior or narrow extremity, and are separated by interspaces which terminate in a marginal alae.

Interstice {Hy}

Latin - interstitium. In combination. Latin. prefix inter - between. Latin. Statum - set or stand.

(1) An opening in a rock or soil that is not occupied by solid matter. (2) An opening or space which may be occupied by air, water, or other gaseous or liquid material.

Synonymous with void, pore.

Example:

Interstices {F}

In combination. Latin. inter - between. Latin. statum - to stand. Also Latin. interstitium.
The small area between named features. e.g. pore interstices, but may also be used to describe a pore itself.
Example:

Interstitial Meshes {F}

In combination. Latin. inter - between. Latin. statum - to stand. Also Latin. interstitium. plus Middle Dutch. maesche.
A patterning between named features. As in between the areolae of *Coscinodiscus obscurus*.
Example:
Miocene and Pliocene Diatoms by W. W. Wornardt
(*Coscinodiscus argus*)
This species is distinguished from *C. radiatus* Ehrenberg in having its areolae increase in diameter toward the border; from *C. obscurus* Schmidt in lacking interstitial meshes.

Interstria {F}

In combination. Latin. inter - between. Latin. stria - a furrow, groove or channel.
The area of plain silica between two bands of striae or alveoli.
Example:

Intertidal {Hy}{E}

Alternately flooded and exposed by tides.
Example:
Distribution of Intertidal Diatoms Associated with Sediments in Yaquina Estuary, Oregon (M. C. Amspoker) [1978]
Differences in diatom assemblages relative to variations in light intensity, water temperature and exposure to intertidal emergence were not

Intertidal zone {H}

Area between mean high-water level and mean low-water level in the coastal region.
Example:

Intertwined {F}

In combination. Latin. prefix inter - between. Old English. twin - twisted thread.
Twisted together.
Example:
Some Fossil Diatoms from Barbados by G. Dallas Hanna & A.L. Brigger
(*Kittonia gigantea*)
Valve ovate, dome-shaped with two very long intertwined processes...

Intervalvular {F}

In combination. Latin. prefix inter - between. Latin. valva - a folding door.
The area between the two valves. Usually referring to the girdle bands etc.
Example:

New Species of Fossil or Pelagic Marine Diatoms
by J. Brun. Trans. J. W. Barker.
(Cocconeis formosa)
Intervalvular hoop seperable and thick...

Interzonal {H}

Latin. inter - between,

Between two zones; used of pelagic species inhabiting two or more defined depth zones.

Example:

Intramarginal {F}

In combination. Latin - intra - within. Latin. marginis.

Within the margins.

Example:

A Treatise on the British Freshwater Algae
by G.S. West & F.E. Fritsch.

(Cocconeis pediculus)

...the lower valve lacking the intramarginal zone of C. placentula.

Intrinsic rate of increase {P}

The "little r" of the exponential (qv) and logistic (qv) models of population increase.

Example:

Introflexed {F}

In combination. Latin. into - into. Latin. flexum - to bend.

Bent inwards. Two elements tending toward one another.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(Amphora ocellata)

...with rounded apices and outer margins slightly introflexed.

Inverse estuary {H}

See negative estuary (cf estuary).

Example:

Investment {F}

In combination. Latin. in - on. Latin. vestire - to clothe.

Clothed or enveloped.

Example:

Notes on Diatoms by F.B. Taylor

31 - ...or are enclosed in a gelatinous frond or

investment, growing in some cases in the form of a miniature plant...

Involution {F}

In combination. Latin. in - in. Latin. volutum - to roll.

Turned inward or rolled at the margin.

Example:

H.M.S. Challenger - Report on the Diatomaceae.

...a slight involution of the proximal bounding line of the ray...

Iridescent {F}

from Greek. Iris - the Rainbow Goddess.

Glittering with changing colours. Often opaline or mother-of-pearl appearance.

Example:

Synopsis of the British Diatomaceae by W. Smith.
pg86. vol 2.

Irruption {P}

Latin. in - in, Latin. rumpere - to break.

Sudden change or oscillation in the population density of an organism, often a rapid growth of population size followed by a crash.

Example:

Some Quantitative Aspects of Algal Growth in Lake Mendota
(D. E. Wohlschlag) [1951]

A diatom irruption dominated by Asterionella was initially evident.

Island effect {P}

Putative occurrence of large concentrations of meso- and bathypelagic organisms around island chains and submerged ridges in otherwise oligotrophic oceanic areas, reflecting the relatively higher productivity around these surface and subsurface features.

Example:

The Development of the Science of Aquatic Ecosystems (R. Patrick) [1997]

Thus I found evidence that the island effect, which McArthur and Wilson had postulated for birds, applied to associations of diatoms.

Isobath {P}{O}{Hy}

Greek. isos - equal, Greek. bathos - depth.

Line (isopleth) of equal depth, commonly used to represent depth contours on a chart of subsurface features.

Example:

Offshore distribution patterns of the cyanobacterium *Trichodesmium erythraeum ehrenberg* and associated phyto- and bacterioplankton in the southern Atlantic coast (Paraná, Brazil) (A. Siqueira) [2006]

Centric and pennate diatoms, *Anabaena* sp. and *Merismopedia* sp. were most abundant at 15 m isobath, while dinoflagellate abundance was relatively constant...

Isobathytherm {O}

A line or surface showing the depths in oceans or lakes at which points have the same temperature. Isobathytherms are usually drawn to show cross sections of the water-mass.

Example:

Isobilateral {G}

In combination. Greek. isos - equal. Latin. bi - twice. Latin. lateralis - a side.

The shape on either side of the apical axis is the same

Example:

The Morphology of the Diatom Frustule
by H.G. Barber & E.Y. Haworth (Gyrosigma)
Valves lanceolate sigmoid with rounded ends, isopolar and
isobilateral.

Isodiametric {F}

In combination. Greek. isos - equal. Greek. dia - through, across. Greek. metron - a measure.

About as broad as it is long.

Example:

The Algae - A review by G. W. Prescott.
Cells which are isodiametric in valve view have wall
ornamentation that is radially symmetrical...

Isohaline {O}

Of equal or constant salinity. A line on a chart connecting all points of equal salinity;
an isopleth of salinity.

Example:

Isolated Puncta {F}

Italian. isolare. Latin. insula - an island. plus Latin punctum; punctus - a prick, small hole or puncture. a point or a dot made in a tablet.

Puncta removed from others within a striae.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(*Cymbella cymbiformis*)
...slightly inflated near the central nodule, and showing
there an isolated punctum, unilateral...

Isolume {P}

Greek. isos - equal,

Line (isopleth) of equal light intensity.

Example:

Photosynthesis/irradiance relationships in the Ross Sea,
Antarctica, and their control by phytoplankton assemblage
composition and environmental factors (C. M. van Hilst)
[2002]

Stn 18, dominated by diatoms, sampled from the 50%
isolume;

Isonome {P}

Greek. isos - equal,

A line on a chart or map connecting points of equal abundance of a species.

Example:

Isopolar {G}

In combination. Greek. isos - equal. Latin. polus and Greek. polos - pivot, axis.

Having apices of the same size and shape.

Example:

The Morphology of the Diatom Frustule
by H.G. Barber & E.Y. Haworth (Gyrosigma)
Valves lanceolate sigmoid with rounded ends, isopolar and

isobilateral.

Isopycnal {P}

Greek. isos - equal,

Line (isopleth) of equal density.

Example:

Occurrence and mechanisms of formation of a dramatic thin layer of marine snow in a shallow Pacific fjord

(A. L. Alldredge) [2002]

...of marine snow was formed when sinking aggregated diatoms reached neutral buoyancy at the. 22.4 isopycnal, probably due to the presence of...

Isotherm {P}{O}{E}

Greek. isos - equal, Greek. therme - heat.

Line (isopleth) of equal temperature.

Example:

Isovalvate {F}

The two valves of a frustule are similar.

Example:

Rines, J.E.B. & P.E. Hargraves - The Chaetoceros
- Bibliotheca Phycologica (79)

Isthmus {P}

Greek. isthmos - to go.

A constriction.

Example:

H.M.S. Challenger - Report on the Diatomaceae
(*Thalassiothrix frauenfeldii*)

...brought about by the development and swelling of a triangular isthmus, which unites its superior extremities.

J

Janus Valves {F}

Diatom cells where the frustule has two distinctly different valves where normally one would expect both valves to be almost identical.

Example:

Jelly {P}

See Gelatinous. Also Gelly.

Jetsam {H}

Anglo-French. jetteson - casting.

Floating debris at sea surface or washed ashore, deliberately cast off from vessel at sea (cf flotsam).

Example:

Jetty {Hy}

A structure (e.g.; a pier, or mole of wood or stone) extending into a sea, lake, or river to influence the current or tide or to protect a harbour.

Example:

Diatoms and drowning (A. Auer) [1988]

A 33-year-old man had been diving repeatedly into a lake from a jetty at the height of summer, when diatom production was at its minimum...

Jokulhlaup {Hy}

An Icelandic term meaning glacier dammed lake outburst flood.

Example:

Sedimentology, paleoflow dynamics and flood history of jokulhlaup deposits; paleohydrology of Holocene sediment sequences in southern Iceland sandur deposits (J. Maizels) [1989]

...stages of a jokulhlaup. Pondered water in the bed of the channel allowed accumulation of laminated silts and sands, containing reworked freshwater diatoms,

Junction Surface {F}

Example:

A Treatise on the Diatomaceae by Henri van Heurck.

(Melosira)

Junction surfaces of frustules convex.

Jurassic {P}

Named after the preponderance of rocks of this particular age found in the Jura mountains.

The middle division of the Mesozoic.

Example:

The Biology of the Algae by F. E. Round.

Reliable records of fossil diatoms extend back to the Jurassic...

Juxtaposed {F}

In combination. Latin. juxta - near. French. poser - to place.

Side by side.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.

(*Cylindrotheca* genus)

Frustules fusiform, furnished with 2 or 3 lines, arranged spirally, and showing juxtaposed dots.

K

Karyokinesis {P}

In combination. Greek. karyon - kernel. Greek. kinesis - movement.

Another term for mitosis.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(Reproduction)

Karyokinesis or indirect cell division...

Keel {F}

Dutch. kiel - ship and Olde English. keel - ship.

A projection of silica from the valve surface that contains the raphe.

Usually in line with or approximating to the apical axis.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.

(*Navicula bilobata*)

Keel almost central, with carinal dots...

Keel Punctae {F}

Dutch. kiel - ship and Olde English. keel - ship. plus Latin Punctum; Punctus – a prick, small hole or puncture. a point or a dot made in a waxen tablet as the sign of a vote.

Pores, or membranes that give the appearance of pores in the plate underlying the Canal Raphe. Called 'Carinal Dots' by some. They are usually quite conspicuous but are limited to a few Genera. See also Fibulae.

Example:

The Morphology of the Diatom Frustule

by H.G. Barber & E.Y. Haworth (*Cylindrotheca*)

...crossed by supporting bars or "keel puncta".

Kettle {Hy}{E}

A steep-sided hole or depression, commonly without surface drainage, formed by the melting of a large detached block of stagnant ice that had been buried in the glacial drift.

Example:

Diatom flora of a kettle-hole bog in relation to hydrarch succession zones (D. L. Cochran-Stafira([1984]

Diatom assemblages were compared to the vegetational seres and to physical and chemical parameters of a kettle-hole bog...

Kettle lake {Hy}

A body of water occupying a kettle, as in a pitted outwash plain or in a kettle moraine.

Example:

The Diatom History of an Urban Lake: Summit Lake, Akron, Ohio (J. C. Gray) [1986]

...melted, forming a "kettle" lake basin.

Keystone Species {E}

A species which, by its presence or absence in a system increases or decreases the diversity of that system.

Example:

Kieselguhr {H}

In combination. German. kiesel - flint. German. guhr - fermentation.

The name given to Diatomite in Germany. The meaning of the word indicating the industrial use of diatomite.

Example:

Pritchard's Infusoria (*Cocconeis clypeus*)
Found fossil, in siliceous paste (Kieselguhr) in
Franzensbad and Bohemia.

Kill {Hy}

Dutch term for stream or creek.

Example:

Knee-like {F}

Example:

A Beginner's Guide to Freshwater Algae
by H. Belcher & E. Swale.
(*Asterionella*)

...are recognised by their longitudinal septa and by the
knee-like swellings at the centre of each cell.

Knob {F}

Low German. knobbe.

A round protruberance

Example:

On New Forms of Marine Diatomaceae by W. Gregory.
(*Denticula fulva*)

...leaving a raphe in the middle, and the two terminal
knobs unstriated.

Knot {P}

Old English. cnotta - a knot.

Derived from the knot-line used to measure speed.

Unit of velocity equal to one nautical mile per hour (0.515 m/sec).

Example:

Knurled {F}

Origin unknown.

A series of ridges and grooves as those produced by milling the edge of a coin.

Example:

Some Fossil Diatoms from Barbados
by G. Dallas Hanna & A.L. Brigger
(*Pseudauliscus ralfsianus*)

The inner side of the marginal ring appears as if knurled
with a fine machine tool.

Kollaplankton (Collaplankton) {P}

Plankton (qv) rendered buoyant by encasement in gelatinous envelopes

Example:

L

LM {P}

Light microscopy Using a microscope in which a beam of light passes through optical
lenses to view an image of the specimen.

Example:

Labiata Process {F}

Latin. labium - a lip. plus Latin processus - advance.

A tube through the valve (on the face or mantle) with internally thickened sides (giving the appearance of lips, hence the name) that may be flat or elevated.

Example:

Diatoms from the South China Seas
by Dickman, Hodgkiss, Cheng & Gao.

(Glossary Entry)

Labiata process - An opening into the valve that terminates in a flattened tube with a longitudinal slit. It may also extend outwards from the valve as a tube. The hyaline rays or slits in the valve of *Asteromphalus* each have a labiate process at the end of the valve slit near the valve margin. Labiate processes are present in some centric and some araphid pennate diatoms. The labiate process may be a precursor to the modern raphe.

Lacerna {P}

Latin.

A cloak.

Example:

Pritchard's Infusoria
(*Frustulia*)

...or grouped together among, an indefinitely-formed gelatinous mantle, or lacerna.

Laciniata {F}

Latin. lacinia.

Cut into narrow lobes.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
(*Hyalodiscus stelliger*)

Umbilicus very distinct, finely granular, with irregular margins often laciniata,...

Lacuna {F}

An opening or cavity.

Example:

Lacustrine {H}{Hy}{E}

Latin. lacus - a lake.

Pertaining to lakes.

Example:

Notes on Diatoms by F.B. Taylor

123 - Lacustrine deposits are easier to examine...

Lacustrine wetlands {Hy}

Wetlands within a lake or reservoir greater than 20 acres or within a lake or reservoir less than 20 acres if the water is greater than 2 meters deep in the deepest part of the basin; ocean-derived salinity is less than 0.5 part per thousand.

Example:

Lagoon, Lagune {H}{Hy}

Italian. laguna.

A shallow stretch of seawater (or lakewater) near or communicating with the sea (or lake) and partly or completely separated from it by a low, narrow, elongate strip of land.

Example:

Lagrangian measurement {P}

Measurement of currents in which the path followed by each fluid particle is traced as a function of time (cf Eulerian measurement). Classic methods of Lagrangian measurement include passive drifters such as buoys, drogues or dye release (not to mention messages in bottles).

Example:

Lam(m)ela(te), Lamellar {G}

Latin. lamella - diminutive of lamina.

A thin plate.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
(*Hydrosilicon* genus)

Valve lamellar (sometimes panduriform), being transversely and longitudinally a pseudo-raphe,...

Lamina(e) {F}

Latin. lamina - a thin plate.

A plate of silica. See also Hyaline.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(*Gomphonema* genus)

Endochrome formed of a single lamina, which rests at the centre...

Lanceolate {G}

Latin. lancea - a lance.

Wide in the middle, tapering at the ends. Lance Head Shaped. Technically - Narrow, subparallel margins, tapered toward apex.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
(*Plagiogramma vanheurckii*)

Valve narrowly lanceolate, with apices generally somewhat rostrate capitate,....

Lancet-Form {F}

Latin. lancea - a lance.

Lancet shaped. As in Lanceolate.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(*Chaetoceros constrictus*)

Valve surface concave, apertures symmetrically lancet-form, slightly narrowing in centre.

Langmuir circulation {P}

A surface system of vortices and antivortices resulting in lines or zones of upwelling

and downwelling, divergences and convergences, often expressed at the surface in so-called drift lines. Set up by light but steady winds, a major source of near surface plankton patchiness.

Example:

Lasciniated {F}

Example:

Report on the Irish Diatomaceae by E. O'Meara.

(*Dickieia pinnata*)

Fronds lasciniated; valves narrow...

Lateral Surface {F}

Latin. latris - a side. plus In combination. French. sur - on. Latin. facies - a face.

See Views.

Example:

Pritchard's Infusoria

(*Navicula bifrons*)

...but both ends of the lateral surface are acute, and the ventral truncated.

Latitude {P}{O}

Latin. latus - broad.

Angular distance north or south of the geographic equator

Example:

Practical Directions for Collecting, Preserving, etc.

by Mead Edwards, Johnston & Smith

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Lax {F}

Latin. laxis - loose.

Loosely. Not strict or absolute.

Example:

H.M.S. Challenger - Report on the Diatomaceae

(*Coscinodiscus atlanticus*)

...but the arrangement in the central part is irregular and more or less lax.

League {P}

Late Latin. leuga - 1500 Roman paces.

An old unit of distance, equal to about 3 nautical miles.

Example:

Leeward {P}

Old English. hleo - shelter.

Pertaining to the side facing away and sheltered from a wind or water current.

Example:

Leibig's Law of the Minimum {E}

Each species in a community requires certain conditions to live, such that if any of them fall below a critical limit, the species cannot survive there.

Example:

Lens-shaped {F}

Latin. lens - a lentil.

See Lenticular.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(*Skeletonema* genus)

Cells circular, lens-shaped, oblong or cylindrical...

Lentic {H}{Hy}{E}

Applied to a freshwater habitat characterized by calm or standing water, eg ponds, lakes, swamps and bogs (cf lotic, lacustrine).

Example:

Lenticular {G}

Latin. lens - a lentil.

Lens shaped, even hemispherical.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(*Chaetoceros karianus*)

Apertures lenticular in old specimens.

Leucosin {P}

Example:

Freshwater Algae - Their Microscopic World Explored
by H. Canter-Lund & J.W.G. Lund.

Levee (Dyke, Dike[USA]) {Hy}{E}

A long, narrow embankment usually built to protect land from flooding. If built of concrete or masonry the structure is usually referred to as a flood wall. Levees and floodwalls confine streamflow within a specified area to prevent flooding. The term "dike" is used to describe an embankment that blocks an area on a reservoir or lake rim that is lower than the top of the dam.

Example:

Ligula {F}

A siliceous extension (as part of the cingula). The ligula intersects with the neighbouring cingula.

Example:

Limbus {F}

Latin.

A border or hem.

Example:

Note on Diatoms by F.B. Taylor.

(Structure and Markings - 66, *Cymbella*)

In some species of this genus a hyaline "limbus" or halo is seen...

Limicolous {H}

Latin. limus - mud, Latin. colere - to dwell.

Inhabiting mud.

Example:

Limnetic {Hy}{H}{E}

The deepwater zone (greater than 2 meters deep); a subsystem of the Lacustrine System of the U.S. Fish and Wildlife Service wetland classification system.

Example:

Limnetic zone {H}{Hy}

Greek. limne - pool or marsh.

The area in deeper and/or more extensive freshwater ecosystems that lies above the compensation depth but beyond the littoral zone. The limnetic and littoral zones together comprise the euphotic zone.

Example:

Limnobios {H}

Greek. limne - pool or marsh.

A lake community.

Example:

Limnodic {H}

Greek. limne - pool or marsh.

Pertaining to salt marshes.

Example:

Limnodium {H}

Greek. limne - pool or marsh.

A salt marsh community.

Example:

Limnology {P}{Hy}

Greek. limne - pool or marsh.

The study of freshwater ecosystems, especially lakes.

Example:

Linear, Lineate {G}

Latin. linearis - pertaining to or consisting of lines.

Long and Narrow with parallel sides.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
(*Navicula rectangulata*)

Valve linear, with apices broadly rounded...

Link-like {F}

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(*Syndetosystis*)

...and curved in a link-like manner round a similar spine...

Linking Spine {F}

A spine linking sibling valves into a chain.

Example:

Rines, J.E.B. & P.E. Hargraves - *The Chaetoceros*
- *Bibliotheca Phycologica* (79)

Lithosphere {Hy}

The solid part of a celestial body (as the earth); specifically : the outer part of the solid earth composed of rock essentially like that exposed at the surface and usually considered to be about 50 miles (80 kilometers) in thickness

Littoral {Hy}{H}{E}

Latin. Litoris, litoralis - shore.

The shallow-water zone (less than 2 meters deep); a subsystem of the Lacustrine System of the U.S. Fish and Wildlife Service wetland classification system.

Example:

Littoral (intertidal) {O}

Area of the shore between mean high water and mean low water; the intertidal zone

Example:

Littoral fringe {H}

Latin. litoris - shore.

The landward edge of the littoral (qv) zone.

Example:

Littoral (Zone) {H}{Hy}

Latin. litoralis - shore.

The space between the high and low tide marks or splash zones whether marine, brackish or freshwater.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(Page 25 - *Melosiraceae*)

Intercalary bands often sculptured. Neritic or littoral.

Lobes {F}

Example:

Diatoms in Eastern Australia by Neils Foged.
(*Eunotia serpentina*)

...with its linear valves and rounded lobes.

Loculi (pl.), Loculus (sing.), Locules, Locula, Loculae {F}

Latin. loculus - a little place. Also loculi - a small receptacle with compartments.

A chamber within a diatom valve. Sometimes restricted to the chambers in a girdle band. See also Partecta.

Example:

The Morphology of the Diatom Frustule
by H.G. Barber & E.Y. Haworth (*Mastogloia*)

Each valve bears two sets of internal compartments
(partecta or loculate chambers) along the valve margins.

Loculiferous, Loculate {F}

Latin. loculus - a little place. Also loculi - a small receptacle with compartments.

(ous) Bearing Loculi. (ate) Like Loculi. See Loculi.

Example:

The Diatomaceae of Philadelphia and Vicinity
by C.S. Boyer.
(*Cocconeis scutellum*)

...and, sometimes a loculiferous rim.

Loess {Hy}

Homogeneous, fine-grained sediment made up primarily of silt and clay, and deposited over a wide area (probably by wind).

Example:

Log and Safety Boom {Hy}{H}

A net-like device installed in a reservoir, upstream of the principal spillway, to prevent logs, debris and boaters from entering a water discharge facility or spillway.

Example:

Long Axis {G}

Latin. longitudo - length. plus axis - an axle, a broad plank.

Axis running pole to pole.

See Apical Axis, Pervavlvar Axis.

Example:

Longitude {P}{O}

Latin. longus (longitudo) - long (length)

An arc of the equator denoting a line drawn between the poles and measured in degrees, minutes and seconds referenced to the standard meridian at Greenwich.

Example:

Practical Directions for Collecting, Preserving, etc.

by Mead Edwards, Johnston & Smith

15

Longitudinal {G}

Latin. longitudo - length.

Along the longest axis.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.

(*Amphora monilifera*)

Between the valves the frustule is marked by three to five longitudinal rows...

Longitudinal Area {G}

Latin. longitudo - length. plus Latin. area - an open space.

See Axial Area.

Example:

A Treatise on the British Freshwater Algae

by G.S. West & F.E. Fritsch.

(*Naviculoideae*)

...in rare cases there is a smooth longitudinal area of some width on each side of the raphe...

Longitudinal Axis {G}

Latin. longitudo - length. plus axis - an axle, a broad plank.

See Apical Axis.

Example:

H.M.S. Challenger - Report on the Diatomaceae

(*Glyphodesmis challengerensis*)

...and the longitudinal axis is represented by two rows of

dots...

Longitudinal Lines {F}

Latin. longitudo - length. plus Latin. linea.

Lines running along apical axis or on either side of axial area.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.
(Amphora lineata)

This outer portion is marked by fine longitudinal lines, of which there are generally four in each valve.

Longitudinal Plane {F}

Latin. longitudo - length. plus Late Latin. planare - to plane, or French. plane.

Example:

A Treatise on the British Freshwater Algae
by G.S. West & F.E. Fritsch.
(Cymbellaceae)

...the frustules are thus symmetrical about a longitudinal plane parallel to the valve-faces...

Longshore {P}{E}{O}

Existing along the shore or referring to currents (Longshore Current) or movement parallel to the coastline.

Example:

Loop {F}

Middle Dutch. lupen - to peer.

A slit.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.
(Campylodiscus centralis)

...near which their centres are joined by semicircular loops, forming a scalloped inner margin...

Lorica {F}

Latin. lorica - a leather corslet.

A name given to the frustule of a diatom or protozoan.

Example:

Pritchard's Infusoria (Navicula follis)

...has a short depressed lorica, swelled at the middle, but no longitudinal striae.

Lotic {H}{Hy}{E}

Referring to a freshwater habitat characterized by running water, eg springs, streams, and rivers (cf fluvial, rhithron, lentic).

Example:

Lotic Diatoms as Environmental Indicators for Modern and Paleo Studies (Brent Bellinger) [2003]

Diatoms in particular are useful ecological indicators because they are abundant in most lotic systems and have been used in a number of trophic indices.

Lower Valve {F}

Old Norse. lagr. plus Latin. valva - a folding door.

The smaller (and usually older) valve in a frustule.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(*Chaetoceros Lauderii*)

Lower valve flatter.

Lozenge {G}{F}

French. losange.

A diamond-shaped parallelogram or rhombus.

Example:

Marine Diatoms of the Philippine Islands by A. Mann
(*Pleurosigma falx*)

...a small lozenge-shaped ventral area; markings coarse...

Lumen {F}

Latin. lumen - to shine.

Where an apex appears more brilliant than the other areas. Due to a thickening of the internal terminal margin of the valve.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
(*Stauroneis Gregorii*)

...and showing a rather small lumen;...

Lunate {G}

Latin. luna - the moon.

Crescent shaped.

Example:

Pritchard's Infusoria (*Synedra bilunaris*)

...resembles two lunate or crescent-shaped bodies attached end to end.

Luticolous {H}

Inhabiting mud.

Example:

Lychnoid {F}

Greek. lychnos - a lamp.

Pertaining to the shape of a lamp or a window.

Example:

The Diatomaceae of Philadelphia and Vicinity
by C.S. Boyer.

(*Actinella* genus)

Valve arcuate, rounded at one end and suddenly widened at the other into a cup-shaped or lychnoid inflation.

Lyrate, Lyriform {G}{F}

Greek. lyra.

Lyre-shaped. (having the terminal lobe much larger than the lateral ones.)

Example:

On New Forms of Marine Diatomaceae by W. Gregory.
(*Navicula lyra*)

...thus forming, in the entire valve, two lyrate shapes united by their bases.

Lysis {P}

Greek. lysis - dissolution.

The breakup of a cell membrane caused by internal changes or external agents.

Example:

Freshwater Algae - Their Microscopic World Explored by H. Canter-Lund & J.W.G. Lund.

M

Macronutrient {P}

An inorganic or organic nutrient compound or element needed in relatively large amounts for autotrophic productivity. Nitrate and phosphate are the most commonly limiting macronutrients in oceanic systems.

Example:

Macroplankton {P}

Greek. macro - great,

Plankton with maximum dimension on the order of 2 - 20 cm.

Example:

Macrophyte {P}

Greek. macro - great,

A large macroscopic plant or alga, used especially in reference to aquatic forms, especially algae, such as kelps.

Example:

Maculate(d), Maculation {F}

Latin. macula - a spot.

Spotted.

Example:

Diatoms from Russian Deposits

by J.W. Barker & S.H. Meakin.

(*Aulacodiscus tuberculatus*)

...distinguished by its maculated appearance...

Main stem {Hy}

The principal course of a river or a stream.

Example:

Major Axis {G}

Latin. major. plus Latin. axis.

The major axis is the longest axis. Often referred to in Centric forms to formulate a ratio between it and the minor axis. See Minor Axis.

Example:

Miocene and Pliocene Diatoms by W. W. Wornardt

(*Auliscus incertus*)

Valve elliptical with major axis about 1.25 times the minor axis.

Example:

Mamillate, Mammiform, Mamiloid {F}

Latin. mamilla - a breast, pap or teat.

Usually this means - bearing a nipple-like protruberance or likened to a nipple-like protruberance. Sometimes, however, it describes a breast-like mound.

Example:

(1) H.M.S. Challenger - Report on the Diatomaceae (Rhaphoneis mammalis)

Its form is elliptico-lanceolate, and its extremities are mammiform, while its transverse...

(2) A Treatise on the Diatomaceae by Henri van Heurck. (Biddulphia regina)

Processes short, obtuse, mammiloid, with puncta becoming gradually finer...

Mantle {F}

Latin. mantel(l)um - A cloak or mantle.

The portion of the valve when seen in girdle view. Not including the girdle bands etc. Also termed Valve Mantle.

Example:

The Morphology of the Diatom Frustule by H.G. Barber & E.Y. Haworth (Eunotia)

Shortened raphe present on each valve mantle, best seen in girdle view.

Margin {F}

Latin. marginis.

The edge of the valve face (in most cases)

Example:

A Treatise on the Diatomaceae by Henri Van Heurck. (Auliscus sculptus)

In this space arise four other series of plicae, of which the two bearing the ocelli radiate from them towards the centre of the valve, while the two others radiate from the centre towards the margin of the valve.

Marginal Ledge {F}

Latin. marginis. plus Middle English. legge.

A ledge or ridge between the valve face and the valve mantle.

See Rim.

Example:

Arachnoidiscus by N.E. Brown. (Arachnoidiscus longii)

Marginal ledge narrow, about 1/5th-1/4th as broad as a marginal space between two primary rays.

Marginal Ridge {F}

See Marginal Ledge.

Example:

Rines, J.E.B. & P.E. Hargraves - The Chaetoceros - Bibliotheca Phycologica (79)

Marginal Ring {F}

Latin. marginis. plus Old English. hringan.

Referring to the patterned or plain area of silica that runs the circumference of the frustule.

Example:

Some Fossil Diatoms from Barbados
by G. Dallas Hanna & A.L. Brigger
(*Pseudauliscus ralfsianus*)

The inner side of the marginal ring appears as if knurled with a fine machine tool.

Marginal Strutted Process {F}

Tubular process through the valve, with two or more satellite pores on the inner valve surface; external evidence may be simply a tube or even nothing more than a pore.

Example:

Marginal Zone {F}

Latin. marginis. plus Latin. zona - a girdle.

An area that runs about the margin of a valve. Not to be confused with the Connecting Zone.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.
(*Coscinodiscus umbonatus*)

The broad marginal zone or brim, and the very convex middle part...

Mariculture {O}

Cultivation of marine organisms under controlled conditions

Example:

The amino acid and gross composition of marine diatoms potentially useful for mariculture (M. R. Brown) [1995]
The usefulness of these diatoms for mariculture will be determined by growth rates, gross composition and acceptability to the animal.

Marine {H}

Latin. mare - sea.

Pertaining to the sea.

Example:

The Marine Plankton by Johnstone, Scott and Chadwick.
...their significance with relation to marine biology.

Marine Snow {O}

As plants and animals near the surface of the ocean die and decay, they fall toward the sea floor, just like leaves and decaying material fall onto a forest floor. In addition to dead animals and plants, marine snow also includes fecal matter, sand, soot, and other inorganic dust. The carbon pump. The decaying material is referred to as "marine snow" because it looks a little bit like white fluffy bits. The "snowflakes" grow as they fall, some reaching several centimeters in diameter. Some flakes fall for weeks before finally reaching the ocean floor.

Example:

An Empirical and Simple Model For Predicting Marine Snow

Formation During Diatom Blooms (J. Ruiz) [2002]
Therefore, it offers a simple alternative to prognose the formation of marine snow and its associated fluxes at episodes of diatom blooms.

Marine wetland {Hy}

Wetlands that are exposed to waves and currents of the open ocean and to water having a salinity greater than 30 parts per thousand; present along the coastlines of the open ocean.

Example:

Marsh {Hy}{E}

A water-saturated, poorly drained area, intermittently or permanently water covered, having aquatic and grasslike vegetation.

Example:

The Diatom Flora of a Salt Marsh on the River Dee (F. E. Round) [1960]

Consequently, the diatom flora at some stations was exposed to air for long periods, subject to intensive drying in summer, and periodically flooded with salt water, the frequency of flooding decreased at the high levels of the marsh.

Mastoid {F}

Greek. mastos - a nipple.

Shaped like a nipple or a teat.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(Auliscus genus)

...with granules arranged round two mastoid processes...

Mathematical Line {F}

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(Campylodiscus Ralfsii)

...up to the raphe, which appears as a mathematical line.

Maxima {P}

Derivative of Latin. magnus.

The highest numbers achieved.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(Rhizosolenia genus)

Large maxima in the summer of rod-shaped form.

Mean Depth {Hy}

The average depth of water in a stream channel or conduit. It is equal to the cross-sectional area divided by the surface width.

Example:

Relationships between Surface Sediment Diatom Assemblages and Lakewater Characteristics in Adirondack Lakes (D. F. Charles) [1985]

...water color, and mean depth were not important in explaining differences among assemblages.

Mean discharge (MEAN) {Hy}

The arithmetic mean of individual daily mean discharges during a specific period, usually daily, monthly, or annually.

Example:

Effects of discharge reduction on diatom colonization below a large hydroelectric dam (C. G. Peterson) [1986]
A greater number of diatom taxa colonized exposed substrata under low mean discharge conditions.

Mean high tide {Hy}

The average altitude of all high tides recorded at a given place over a 19-year period.

Example:

Distribution of living and dead diatoms in tidal wetlands of northern Japan (Y. Sawai) [2001]
A high marsh assemblage formed at or slightly above mean high tide level...

Mean low tide {Hy}

The average altitude of all low tides recorded at a given place over a 19-year period.

Example:

The Formation of a "Primary Film" on Materials Submerged in the Sea at Port Hueneme, California (T. B. O'Neill) [1971]

The water depth varied from 4 feet at mean low tide to 12 feet at mean high tide.

Mean Sea Level {O}

The average level of the sea over a period of time, taking into account periodic changes due to tides and other fluctuations (such as wind waves).

Example:

Late Holocene diatom biostratigraphy and sea-level changes in the southeastern Beaufort Sea (S. Campeau) [2000]
...the appearance of epipelagic diatoms, and a drastic decline in freshwater species. This indicates that the mean sea level reached the basin...

Meander {Hy}

The winding of a stream channel.

Example:

Short term dynamics of diatoms in an upland stream and implications for monitoring eutrophication (M. G. Kelly) [2003]
...of a meander upstream, releasing fine silts which favoured motile diatoms.

Meander Belt {Hy}

The area between lines drawn tangential to the extreme limits of fully developed meanders.

Example:

The Holocene giant Lake Chad revealed by digital elevation models (J. F. Ghienne) [2002]
...the channel morphology clearly defines a meander belt onto the terrace.

Median {Hy}

The middle or central value in a distribution of data ranked in order of magnitude. The median is also known as the 50th percentile.

Example:

Environmental control of diatom community size structure varies across aquatic ecosystems (Z. V. Finkel) [2009]
Decreases in the median size of diatoms within communities, in concert with climate warming and water column stratification.

Median Line {F}

Latin. medianus - middle. plus Latin. linea.

A physical or implied line (not necessarily straight) running through the middle of a frustule, but not a necessarily a raphe. See also Sagittal Axis

Example:

Synopsis of the British Diatomaceae by W. Smith.
(Cocconeis Thwaitesii)
...valve constricted towards the obtuse extremities;
median line sigmoid; disc faintly striated...

Median Portion {F}

Latin. medianus - middle.

The area of the valve in the middle of the valve, apex to apex.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
(Sceptroneis caduceus)
Median portion verly slightly inflated.

Medial(ly) {F}

Late Latin. medians - in the middle of.

Relating to the middle.

Example:

New Species of Mesodictyon (Bacillariophyta: Thalassiosiraceae) in Late Miocene Lacustrine Deposits of the Snake River Basin, Idaho (E. Theriot) [1990]
A cladistic analysis of the medial cribrum, alveolus and alveolar-like structures and internal rib thickening supports...

Mediterranean lenses {O}

A coherent mass of anticyclonically rotating, warm salty water in the Atlantic Ocean originating from the Mediterranean Sea. Also called ``Meddies'', these mesoscale lenses have been observed to persist for up to many months.

Example:

Megaplankton {P}

Greek. mega - big.

Plankton with maximum dimension on the order of 20 - 200 cm.

Example:

Meiobenthos {H}

Greek. meion - less.

Benthic organisms such as foraminifera, small nematodes and juvenile macroinvertebrates, 100 - 1000 mm in maximum dimension.

Example:

Microbial Food Webs in Marine Sediments (S. S. Epstein) [1997]

Trophic interactions between diatoms and micro- and meiobenthos might be a factor limiting growth of small (around 10 Mtm) diatoms.

Meiosis, Meiotic {P}

Greek. meiosis - diminution.

Cell division with a reduction of the number of chromosomes given to each part.

Example:

The Plant Cell by William A. Jensen.

In the first division (meiosis I), the chromosome number is halved; in the second division (meiosis II), the reduced number is reproduced.

Meniscus {Hy}

The curved surface of the liquid at the open end of a capillary column.

Example:

Meridional {P}{O}

Latin. meridianus - midday.

Term used to describe objects or events mainly in a latitudinal (north-south) direction, eg the meridional flow of eastern and western boundary currents (cf zonal).

Example:

Recurrent Groups of Diatom Species in the North Pacific (E. L. Venrick) [1971]

...designed to define meaningful associations of diatom species and to describe their distributions along a meridional axis.

Meromictic {H}

Greek. meros -part,

Pertaining to a permanently stratified lake, usually resulting from a significant temperature or salinity difference (and hence density difference) between the epilimnion (qv) and hypolimnion (qv).

Example:

Late Quaternary diatom and chemical profiles from a meromictic lake in Quebec, Canada (R. Jones) [1984]

An investigation of the chemistry and diatoms in the sediments of a small hardwater meromictic lake in Quebec indicated remains of both freshwater and brackish

(halophilic) water diatoms in the organic sediments laid down after the lake was isolated by isostatic rebound from the Champlain Sea...

Meropelagic {P}

Greek. meros -part,

Aquatic organisms that are only temporary members of the pelagic (qv) community (cf holopelagic).

Example:

Meroplankton {P}{O}

Greek. meros -part,

Invertebrate larvae inhabiting the plankton (qv) only prior to metamorphosis, adults being benthic; also termed hemiplanktonic (cf holoplankton).

Example:

Sediment removal by the Lake Apopka marsh flow-way (R. W. Bachmann) [2001]

...several investigators at the lake who recorded increases in total suspended matter and meroplankton diatoms following wind events...

Meroplanktonic {H}

In combination. Greek. mero - part. Greek. planktos - wandering.

Used to refer to species that are planktonic for only part of their life cycle.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour. (Habits)

Those forms which are dependent on the coast are sometimes called meroplanktonic, and those which...

Mesh {F}

Old English. max - net.

A network of similar interlocking shapes. A net pattern.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour. (Coscinodiscus excentricus)

Sculpture hexagonal meshes arranged in slightly curved, near parallel rows...

Mesic {E}

Semi-wet.

Example:

Mesohaline {H}{P}

Having a salt concentration of between 500mg Chloride/L and 30,000mg Chloride/L. (more generally expressed as 5-18ppt). Brackish water conditions.

Example:

Chesapeake Bay Watershed Historical Land Use: Impact on Water Quality and Diatom Communities (S. R. Cooper) [1995]

There is also evidence that freshwater input to the mesohaline Chesapeake Bay has increased. Changes in diatom community structure and geochemical indicators reflect major changes in land use patterns of the watershed and

increasing population.

Mesohalobous {H}{P}

Latin. Meso – middle.

Having a salt concentration of between 500mg Chloride/L and 30,000mg Chloride/L.
Brackish water conditions.

Example:

Diatoms in Eastern Australia by Neils Foged.

Mesopelagic {H}

Greek. mesos - middle,

(1) The stratum between 200 and about 1000 m.

(2) Corresponds to the disphotic (qv) zone where light cues result in diel behavioral responses such as diel vertical migration but in which light is insufficient to support net positive productivity.

Example:

Export and mesopelagic particle flux during a North Atlantic spring diatom bloom (P. Martin et al) [2011]
...that diatom blooms can lead to substantial particle export that is transferred efficiently through the mesopelagic.

Mesophyte {Hy}{E}

Any plant growing where moisture and aeration conditions lie between the extremes of "wet" and "dry."

Example:

Late Quaternary Environmental History of Lake Valencia, Venezuela (J. Platt Bradbury) [1981]
...spores and pollen of warm mesophytic plants fluctuate throughout this zone...

Mesoplankton {P}

Greek. mesos - middle,

Plankton (qv) with maximum dimension on the order of 0.2 - 20.0 mm

Example:

Trophic transfer of methylmercury and trace elements by tropical estuarine seston and plankton (H. A. Kehrig) [2009]

Microplankton was primarily composed of proto-zooplankton and diatoms (>90%) while approximately 50% of mesoplankton was composed mainly of copepods.

Mesorhabde {F}

Blank or 'white' space.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(History of Diatoms)

The mesorhabde, which is faint or absent in many diatoms, is highly developed in others...

Mesosaprobic {H}{P}

A zone or organic load oxidation.

Example:

Assessment of Water Quality, Benthic Invertebrates, and Periphyton in the Threemile Creek Basin, Mobile, Alabama, 1999-2003 (A. K. McPherson) [2004]

During September 2000, •-saprobic and •-mesosaprobic diatoms were more common than oligosaprobic diatoms at all sites

Mesotrophic {H}{P}{E}

In combination. Greek. mesos - middle. Greek. trophe - nourishment.

Having neither high nor low nutrient levels. (Compare with Dystrophic, Eutrophic and Oligotrophic)

Example:

Climate-induced changes in the trophic status of a Central European lake (E. Kirilova) [2009]

Diatoms with eutrophic affinities still were present in the assemblages, although the abundances of mesotrophic diatoms increased

Metalimnion {P}

In combination. Greek. meta - among. Greek. limne - a pool or marsh.

The middle layer of water, defined by its temperature in relation to that above it and that below. Also called the Thermocline.

See also Epilimnion, Hypolimnion, Thermocline.

Example:

Freshwater Algae -their Microscopic World Explored by H. Canter-Lund & J.W.G. Lund

pg18 - ...algae may be mixed more or less at random in the upper epilimnion but the nearer they come to the metalimnion, the less turbulent the water.

Metaphyton, Metaphytic {H}

In combination. Greek. meta - among, with, beside, after. Greek. phyton - plant.

A diatom mass associated with aquatic macrophytes, easily dislodged by squeezing.

Example:

The Biology of the Algae by F. E. Round.

...termed this assemblage the metaphyton and lists in this a very large number of species...

Metaplankton {F}

In combination. Greek. meta - among. Greek. planktos - wandering.

Refers to both attached and free-living diatoms that occur in either the intertidal zone or the littoral zone.

Example:

Diatoms from the South China Seas by Dickman, Hodgkiss, Cheng & Gao. (Glossary Entry)

Metastasis {P}

Greek. metastasis - change of place.

Example:

Notes on Diatoms by F.B. Taylor

82. - Where they are not provided, he thought that the communication (metastasis) is effected through the

membrane...

Micrograms per litre (µg/L) {Hy}

A unit expressing the concentration of constituents in solution as weight (micrograms) of solute per unit volume (litre) of water; equivalent to one part per billion in most streamwater and ground water. One thousand micrograms per liter equals 1 mg/L.
Example:

Micronutrient {P}

Greek. mikros - little,

Organic or inorganic element or compound needed only in relatively small amounts by living organisms for autotrophy (cf macronutrient).

Example:

A rising tide lifts all phytoplankton: Growth response of other phytoplankton taxa in diatom-dominated blooms (R. T. Barber) [2006]

...oceanic iron-addition experiments have allowed documentation of the biological response to rapid onset of favorable nutrient, micronutrient or light conditions. The response of diatoms to these favorable conditions is well known;...

Microplankton {P}{O}

Greek. mikros - little,

Plankton (qv) with maximum dimensions on the order of 20 - 200 microns.

However, sometimes described as net plankton, composed of individuals below 1mm in size but large enough to be retained by a small mesh net

Example:

Annual microplankton cycles in Villefranche Bay, Ligurian Sea, NW Mediterranean (F. Gómez) [2003]

Diatoms dominated the microplankton in late spring and autumn,...

Microspores {P}

In combination. Greek. mikros - little. Greek. spora - a seed.

Spores formed from the subdivision of the protoplast.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour. (Reproduction)

Swarm spores or microspores have been observed in a few diatoms...

Mictic {P}

Pertaining to the pattern of water circulation in a lake, eg holomictic (qv), meromictic (qv), etc.

Example:

Predicting toxic effects of contaminants in ecosystems using single species investigations (R. Altenburger) [2003]

...periodically resuspended e.g. by annual circulations of a mictic lake.

Mid-depth species {P}

See midwater species.

Example:

Mid-ocean ridge (MOR) {H}

A topographical feature of the deep ocean floor comprising mountain ridges, rift valleys, and so forth, presumed to be sites of formation and spreading of new ocean floor, eg the Mid-Atlantic Ridge, Carlsberg Ridge, East Pacific Rise, etc.

Example:

Midwater species {P}

For oceanic species, a catchall term applied to meso- and bathypelagic species.

Example:

Milky seas {P}

Seas in which surface waters are brilliantly lit (visible at night) by bioluminescent organisms (presumably bacteria or protists). Milky seas may extend (in shipboard perspective) from horizon to horizon. They have been most commonly reported in the equatorial and north Indian Ocean.

Example:

Luminous Marine Organisms (S. H. D. Haddock) [2006]

The most dramatic example of light produced by bacteria is found in the form of rare milky seas, where the surface of the water glows from horizon to horizon.

Milligrams per litre (mg/L) {Hy}

A unit expressing the concentration of chemical constituents in solution as weight (milligrams) of solute per unit volume (litre) of water; equivalent to one part per million in most streamwater and ground water. One thousand micrograms per liter equals 1 mg/L.

Example:

Minor Axis {G}

Latin. minor - less. plus Latin. axis.

The minor axis is the smallest axis. Often referred to in Centric forms to formulate a ratio between it and the major axis. (This ratio may be important in determining species) See Major Axis.

Example:

Miocene and Pliocene Diatoms by W. W. Wornardt
(*Auliscus incertus*)

Valve elliptical with major axis about 1.25 times the minor axis.

A Treatise on the Diatomaceae by Henri van Heurck.
(*Chaetoceros paradoxum* v. *Eibenii*)

...horns curved in the direction of the minor axis.

Miocene {H}

In combination. Greek. meion - smaller. Greek. kainos - recent.

Of the Tertiary period, preceding the Pliocene.

Example:

Arachnoidiscus by N.E. Brown.
(*Arachnoidiscus ornatus*)

...appears to have been as widely spread in Miocene times as now,...

Mitosis {P}{E}

Greek. mitos - fibre.

Nuclear division where the daughter cells inherit the same number of chromosomes as the parent. (Doubling)

Example:

The Plant Cell by William A. Jensen.

During the process of mitosis the nucleus divides...

Mixed layer {H}{O}

Surface layer of the sea in which essentially isothermal conditions (above the main or seasonal thermocline) result in virtually isopycnal (σ_t) conditions throughout the layer, allowing complete mixing and overturn within the layer by the wind.

Example:

Diatom fluxes to the deep sea in the oligotrophic North Pacific gyre at Station ALOHA (R. Scharek) [1999]

The mixed-layer diatom assemblage appears to be more important...

Mixotrophic {P}

Cells with both photosynthetic and heterotrophic or phagotrophic nutrition.

Example:

Classification of two unialgal cultures from Strawberry Creek: the isolation of a mixotrophic diatom and a related species of *Wislouchiella planctonica* (T. A. Lee)

The survival of mixotrophic diatoms after a disturbance event can then facilitate the succession of other algal species and ultimately contribute to the species diversity of an aquatic environment.

Mobiles {P}

Latin. mobilis - to move.

One of Mereschkowsky's division of diatoms based upon a diatoms ability to move.

See also Immobiles.

Example:

Notes on Diatoms by F.B. Taylor

96 - ...The Mobiles include some of the Pennatae, and the...

Moiety

Old French. moite.

A word used in Van Heurck's Treatise to denote half of a valve (or up to the median line which is determined to partition the valve).

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
(*Campylodiscus Clypeus*)

...with costae occupying only about the moiety of the ray...

Moniliform {G}{F}{H}

Latin. monile - a necklace.

Appearing as a string of beads. This term has been used widely, describing

shape, frustule ornamentation and mode of existence.

Example:

Marine Diatoms of the Philippine Islands by A. Mann
(*Amphora tumilifer*)

...markings of coarse, transverse, somewhat wavy,
moniliform lines, extending from the dorsal side across
the raphe...

Monoculture {O}{E}

Cultivation of only one species of organism in an aquaculture system or evidence of a single species domination.

Example:

Diatom-inferred Holocene climatic and environmental changes in an unusually subsaline high Arctic nunatak pond on Ellesmere Island (Nunavut, Canada) (C. A. Paul) [2010]
Between ~10500 and ~6200 cal. year BP, the diatom assemblages underwent a shift from a near monoculture of *F. construens* var. *venter* to a more complex,...

Monomictic {H}

Greek. monos - single, alone,

Applied to lakes in which only one seasonal period of free circulation (turnover) occurs each year. Typical of high latitude lakes.

Example:

Diatom Production Responses to the Development of Early Agriculture in a Boreal Forest Lake-Catchment (Kassjon, northern Sweden) (N. J. Anderson) [1995]

Diatom production in a boreal forest lake typical temperate, monomictic lakes where diatom production is confined to the spring and autumn...

Monophyletic {P}

A group of organisms that share a single common ancestor (not necessarily different species)

Example:

Pursuit of a natural classification of diatoms: History, monophyly and the rejection of paraphyletic taxa (D. M. Williams) [2007]

...it seems only raphid diatoms are monophyletic - something known for quite some time.

Monoraphid {F}

Applies to a pennate diatom with a raphe system on one valve only.

Example:

Resistance and Resilience of Lotic Algal Communities: Importance of Disturbance Timing and Current (C. G. Peterson) [1992]

Succession proceeded from a sparsely populated community dominated by a small, monoraphid diatom (*Achnanthes minutissima*) immediately after the initial spate, to dominance by dense floating mats of filamentous green algae

Monosaccharide {P}

In combination. Greek. monos - single, alone. Latin. saccharum. Greek. sakcharon - sugar.

A carbohydrate. CH₂O₃-7. Associated with locomotion.

Example:

The carbohydrates of *Phaeocystis* and their degradation in the microbial food web – a review (A. C. Alderkamp)

Monosaccharides are the first products of photosynthesis and form the precursors for biosynthesis of most molecules.

Monotopic {P}

Greek. monos - single, alone,

Occurring in a single locality or geographic area (cf polytopic). Also pertaining to cell membranes.

Example:

Monotypic {P}

Genus that has a single species member only.

Example:

The Evolution of Elongate Shape in Diatoms (A. J. Alverson) [2006]

Toxarium undulatum Bailey is another diatom with features of both centrics and pennates. *Toxarium* is a monotypic genus with a distinctly elongate cell shape, though it lacks many of the other features traditionally used to circumscribe Pennales.

Montane {H}

Latin. montanus - a mountain.

Of the mountain.

Example:

The Morphology of the Diatom *Frustule* by H.G. Barber & E.Y. Haworth (*Amphicampa*)
Usually occurs in montane lakes.

Morainal Lake {P}

Lake basin formed through glacial activity where the valley in which the lake sits has been closed off by glacial deposits.

Example:

Botanical Survey of the Huron River Valley II. A Peat Bog and Morainal Lake (Lewis. H. Weld) [1904]

Morphotype {P}

A recognisable form of a species that has a variable morphology.

Example:

Morphotype variations in subfossil diatom species of *Aulacoseira* in 24 Michigan Lakes, USA (K. M. Manoylov) [2009]

Diatom-inferred past conditions revealed that the observed morphotypes probably represent taxa with different ecological preferences.

Mosaic {F}

Greek. mousa - a muse.

Fitted closely together.

Example:

New Species of Fossil or Pelagic Marine Diatoms
by J. Brun. Trans. J. W. Barker.

(Actinoptychus mosaica)

...covered with a punctuation grouped in mosaic, giving it a reticulated appearance.

Mother-cell {F}

Example:

Report on the Irish Diatomaceae by E. O'Meara.

(Orthosira genus)

The plane of division crosses that of the mother-cell.

Motile {H}

Latin. motio - moving, motion.

The ability to move.

Example:

Algae and Fungi by C. J. Alexopoulos & H. C. Bold.

...such diatoms are motile although the mechanism...

Mottling {F}

Unknown origin.

A blotched appearance.

Example:

Some Fossil Diatoms from Barbados

by G. Dallas Hanna & A.L. Brigger

(Stephanogonia mutabila)

Surface markings between the ridges....and aperture appear as indefinite mottling...

Mouth {Hy}

The place where a stream discharges to a larger stream, a lake, or the sea.

Example:

Diatoms from the Pearl River estuary, China and their suitability as water salinity indicators for coastal environments (Y. Zong) [2010]

This is a period of relatively stable sea level and deltaic shoreline progradation making the core site closer to the river mouth. The gradual increase in marine diatoms therefore suggests a decrease in freshwater discharge...

Movable Bed {Hy}

A stream bed made up of materials readily transportable by the stream flow.

Example:

Unified View of Sediment Transport by Currents and Waves.

I: Initiation of Motion, Bed Roughness, and Bed-Load Transport (L. C. van Rijn) [2007]

In case of a movable bed consisting of sediments...

Mucilage, Mucilagenous {P}

Latin. mucus - slime.

A substance which swells in contact with water forming a slimy mass (or mess)

Usually contains polysaccharides.

Example:

Diatoms of British Coastal Plankton by J. B. Sykes.

The valve surface may have one or more spines or mucilage threads issuing from it.

Mucilage Cushion {F}

Latin. mucus - slime. plus Old French. coisson.

Cushion shaped blobs of mucilage, usually seen holding frustules together by a corner of their base.

Example:

A Treatise on the British Freshwater Algae

by G.S. West & F.E. Fritsch.

...but in other cases they are united by mucilage-cushions at the corners, forming zig-zag colonies.

Mucilage Envelope, Mucilage Stalks {F}

Latin. mucus - slime.

Descriptions of mucilage form.

Mucro, Mucronate, Mucrones {F}

Latin. mucro - a sharp point.

Sharp pointed.

Example:

(1) British Diatomaceae by Arthur Scott Donkin.

(Navicula palpebralis)

...extremities acute and slightly mucronate...

(2) A Treatise on the Diatomaceae by Henri Van Heurck.

(Rhizosolenia robusta)

...imbrication confused, mucrones small...

Muc(o)us {P}

Latin. mucus - nose.

In diatoms this is a shortened form of Mucilage, which is a mixture of carbohydrates and/or polysaccharides, which depending upon its constituents is either slimy or sticky.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.

(Hyalodiscus genus)

...provided with pores for the secretion of mucus for attachment...

Mucro {F}

Latin. mucro - a sharp point.

A short, stiff sharp point forming an abrupt end.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.

(Guinardia genus)

...valves circular, showing an undulation ending in an elementary mucro.

Mucronate {F}

Latin. mucro - a sharp point.

Either having short, stiff sharp points forming an abrupt end (see Mucro) or appearing as such.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.

(*Navicula palpebralis*)

Valve broadly elliptic-lanceolate, with apices acute, slightly mucronate;...

Multiaxial {F}

See Multiseriate

Example:

Multifid {F}

In combination. Latin. multus - much. Latin. findere - to cleave or split.

See also Bifid.

Example:

H.M.S. Challenger - Report on the Diatomaceae

(*Rhizosolenia* genus)

...while the other is attenuate and multifid as if terminating in little roots.

Multipartite {F}

In combination. Latin. multus - much. Latin. partitus - divided.

Divided into many parts.

Example:

Pritchard's Infusoria

(*Fragilaria multipunctata*)

...ova of a yellow golden colour, and multipartite.

This term, only found so far, in Pritchard, refers to Chloroplasts.

Multipolar {F}

Centric diatom in which the valve outline is NOT circular.

Example:

Phylogenetic analysis of diatom *coxI* genes and

implications of a fluctuating GC content on mitochondrial genetic code evolution (M. Ehara) [2000]

...the multipolar centric diatom, *D. brightwellii*, a species which appears to use the universal code...

Multiseriate {F}

In combination. Latin. multi. - a lot, many. Latin. series - a row, succession, chain.

Made up of many rows. Usually used when referring to rows of pores.

Example:

The Algae - A review by G. W. Prescott.

The valves have radiating (uniseriate and multiseriate) rows of puncta...

Multivalved {F}

In combination. Latin. multus - much. Latin. valvae - leaves or folds.

Pertaining to a frustule that has more than two valves.

Example:

Pritchard's Infusoria

(Tessella)

...they are covered with a simple bivalved or multivalved siliceous lorica...

Pritchard appears to be the only text that uses this term in relation to the diatomaceae.

Mutualism {O}

An intimate association between different organisms in which both organisms benefit

Example:

Nitrogen fixation and transfer in open ocean diatom-cyanobacterial symbioses (R. A. Foster) [2011]

Some of these associations are believed to be mutualistic, where N₂-fixing cyanobacterial symbionts provide N for the diatoms.

N

n. sp.

Abbreviation of the Latin species nova, new species.

Also nov. sp.

Example:

Nan(n)oplankton {P}{O}

Greek. nanos - a dwarf,

Plankton (qv) with maximum dimension on the order of 2.0 - 20.0 microns

But also sometimes described - plankton smaller than 10 microns, which pass through an ordinary plankton net but can be removed from the water by centrifuging samples.

Example:

Narrow Girdle View {M}

Old English. nearu. plus Old English. gyrdle - to gird. plus French. vue - see.

A view of a frustule or valve with the apex facing you and only a narrow view of the mantle is visible i.e. a side-on view at its narrowest.

Example:

Eucampia antarctica var. *recta* (Mangin) stat. nov.

(Biddulphiaceae, Bacillariophyceae): life stages at the Weddell Sea ice edge (G. A. Fryxell) [1990]

...arched in narrow girdle view,...

Nautical mile {P}{O}

International: a secondary SI unit equal to 1,852 m, the average distance on Earth's surface subtended by one minute of latitude. It is approximately 1/8th longer than the statute mile.

Example:

Morphologic Comparisons of Shallow and Deepwater Benthic Marine Diatoms of Onslow Bay, North Carolina (Dorien Kymberley McGee) [2005]

These stations made up a 2.12 nautical mile transect with depths...

Navicular or Navicula-Shaped {G}

Latin. navicula - a small boat, skiff.

Boat Shaped.

Example:

Pritchard's Infusoria (Syncyclia)

...a double envelope; inner one, or lorica, siliceous,
Navicula-shaped;...

Naviculoid {G}

Latin. navicula - a small boat, skiff.

See Navicular.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.

(*Cymbella aequalis*)

Valve lanceolate, almost naviculoid, with dorsal margin regularly arcuate,...

Neap tides {P}{O}{E}

Lower than average tides (qv) associated with quadrature (qv) of sun and moon.

Example:

The Diatom Flora of a Salt Marsh on the River Dee (F. E. Round) [1960]

The entire transect was covered with water at times of spring tides and up to about the middle of the marsh during neap tides. Consequently, the diatom flora at some stations was exposed to the air for long...

Nearshore {H}

Areas of inner neritic (qv) zone.

Example:

Diatom-inferred lake level from near-shore cores in a drainage (K. R. Laird) [2008]

...and diatoms proved to be a robust means of inferring past lake levels from near-shore sediments...

Nebulous {F}

Latin. nebula - mist.

Hazy, vague or formless.

Example:

The Morphology of the Diatom Frustule

by H.G. Barber & E.Y. Haworth

Lateral or axial area with nebulous markings.

Needle {F}

Old English. naedl.

Sharp, pointed and elongated.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.

(*Chaetoceros Lauder*)

...and at the margin armed with a circle of parallel needles, directed upwards.

Needle-shaped {H}

Old English. naedl.

Long, thin and usually pointed at one or both ends.

Example:

The Algae - A review by G. W. Prescott.

Cells are fusiform, needle-shaped, lunate, sigmoid, or slipper- and wedge-shaped.

Negative estuary {H}

An estuary whose waters have salinities greater than the adjacent sea, as contrasted with a normal estuary of lower salinity (cf estuary, neutral estuary).

Example:

The Spring Phytoplankton Bloom in the Coastal Temperate Ocean: Growth Criteria and Seeding from Shallow Embayments (D. Ianson) [2001]

The bay acted as a negative estuary due to external fresh water input from the Fraser River. During the early part of the 1992 study the Fraser outflow was a little stronger than the average, but more importantly wind conditions were weak. In situ vegetative cells of *Skeletonema costatum* seeded the bloom both inside and outside of the bay...

Neotype {P}

Greek. neos - new,

A specimen selected as type subsequent to the original description in cases where the original type(s) (holotype, syntype(s)) are known to have been destroyed.

Example:

Morphometric Analysis of Shape of Specimens from the Neotype of *Tabellaria flocculosa* (E. Theriot) [1986]
Shape variation of 67 specimens from the neotype slide of *Tabellariaflocculosa* was analyzed...

Nepheloid layer {H}

A turbid layer of ocean water, usually at or near the bottom of the deep ocean, carrying very fine suspended particulate matter.

Example:

Nepheloid Layer in Lake Ontario (R. G. Sandilands) [1983]
The particles in the nepheloid layer in the western basin of Lake Ontario consisted of many diatoms and some calcite particles and clay...

Neritic {H}

Derived Latin. nereis - a sea-nymph.

Relating to the shallow waters along a coastline.

Example:

The Biology of the Algae by F. E. Round.

It is interesting that this widespread species is also recorded as a neritic, ice-edge species...

Neritopelagic {H}

Greek. nerites - a sea-snail.

Inhabiting the shallow coastal water column over the continental shelf.

Example:

Nerve-like {F}

Example:

A Treatise on the Diatomaceae by Henri van Heurck.

(*Biddulphia alternans*)

...separated by nerve-like lines from the median portion...

Net plankton {P}

General term for planktonic organisms large enough and strong enough to be retained by a net of given mesh size.

Example:

The production and fate of phytoplankton size fractions in the plume of the Hudson River, New York (T. C. Malone) [1979]

Biomass was highest and most uniformly distributed during February-March when net plankton diatoms dominated and doubling times approximated the flushing time of the plume.

Neuston {P}

Greek. neustos - swimming.

Pelagic organisms in the uppermost surface or near-surface layer of the sea;

"euneuston" - organisms with maximum abundance at the surface day and night;

"facultative neuston" - concentrate at the surface only during feeding; "pseudoneuston" - reach the surface layers at least during certain hours, but do not exhibit maximum abundance at the surface.

Example:

Phytoneuston Ecology of a Temperate Marine Lagoon (J. T. Hardy)

Fairly abundant neuston communities developed in spring and midsummer, for example a n:p ratio of 10.9 on 7 March 1970, resulting from high neustonic concentrations of the dominant *Cylindrotheca* spp. and *Navicula directa* as well as small pennate diatoms, *Pleurosigma*/*Gyrosigma* spp., and *Thalassionema nitzschioides*.

Neutral estuary {H}

A semienclosed body of water with salinity neither substantially higher or lower than the adjacent sea, with which it is connected by a restricted opening (cf estuary, negative estuary).

Example:

Niche {P}{O}{E}

Unknown origin, though of French form.

The functional position of an organism in a community including its interaction with all physical, chemical and biological parameters of the environment that impact that position.

Example:

Broad-scale environmental response and niche conservatism in lacustrine diatom communities (J. R. Bennett) [2010]
The availability of a wide variety of propagules with consistent niches across regions indicates that diatom communities reflect the succession of taxa...

Nitescens {F}

Latin. nitidus - to shine.

Shining or glassy. See Nitid.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.

(*Coscinodiscus nitidus*)

Aspect of valve glassy, punctae nitiscent, very much as in...

Nitid {F}

Latin. nitidus - to shine.

Shining.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.

(*Cocconeis nitida*)

It is marked by lines of very large nitid granules...

Nodose {F}

Latin. nodus.

Bearing nodes, knots or swellings. See Nodulose.

Example:

The Morphology of the Diatom Frustule

by H.G. Barber & E.Y. Haworth

Area with nodose markings.

Nodule, Noduli, Nodulus {F}

Latin. nodus - a knot.

A small knob of silica usually at the central node or at the poles (raphe ends at the apices) but has been used to describe features anywhere on the frustule.

Example:

H.M.S. Challenger - Report on the Diatomaceae (*Navicula decipiens*)

It is to be noted, however, that the two noduli are not at the same level,...

Nodulose {F}

Latin. nodus - a knot.

Having nodes, knots or swellings. In the example below probably referring to swellings.

Example:

A Treatise on the British Freshwater Algae

by G.S. West & F.E. Fritsch.

(*Eunotia*)

Valves arcuate or bow-shaped, the dorsal margin often undulate or nodulose,...

Nomen nudum

A name that as originally published fails to meet all of the mandatory requirements of ICZN and is thus lacking status in zoological nomenclature.

Example:

Nomen oblitum

Forgotten name. A name that has not been used in the zoological literature for at least 50 years.

Example:

Nomograph {P}

Greek. nomos - law, Greek. graphein - to write.

A graph on which temperature and density contours are plotted against salinity for given field data. Used in the depiction of T-S curves (qv) and T-S envelopes (qv), and for water mass identification and description.

Example:

Coefficients of variation for chlorophyll, green algae, diatoms, cryptophytes and blue-greens in rivers as a basis for predictive modelling and aquatic management (L. Hakanson) [2003]

The nomogram shows how many samples must be analysed to...

Non-cellular {F}

Example:

A Treatise on the Diatomaceae by Henri van Heurck.

(*Muelleriella*)

Valves elliptic, with non-cellular structure...

Notch {F}

Source unknown.

An indentation.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.

(*Amphora lyrata*)

Form doubly lyrate, with truncate ends, and a notch in the middle...

Nuclei (pl.), Nucleus (sing.) {P}

Latin. nucleus - a kernel, a nut.

The controlling element in a cell containing the genetic material. Also used in some American texts to describe the centre of a valve from which various features radiate.

Example:

The Plant Cell by William A. Jensen.

The nucleus is a universal prominent feature of all cells except bacteria and blue-green algae.

Nucleolus {P}

Latin. nucula - a nut.

Also known as a nucleole, a secondary body within a cell.

Example:

Synopsis of the British Diatomaceae by W. Smith.

...the nucleus or cytoblast of the cell, which frequently encloses an evident nucleolus.

Nutricline {H}

Latin. nutrire - to nourish,

Zone of rapid change of nutrient concentration with distance (typically with depth).

Example:

The role of nutricline depth in regulating the ocean carbon cycle (P. Cermeño) [2008]

We analyzed phytoplankton community composition in the Atlantic Ocean and show that the distribution of diatoms and coccolithophorids is correlated with the nutricline depth, a proxy of nutrient supply to the upper mixed layer of the ocean.

Nutrient {Hy}{P}{O}

Latin. nutrire - to nourish,

Element or compound essential for animal and plant growth. Common nutrients in fertilizer include nitrogen, phosphorus, and potassium.

Example:

Trophic Diatom Indices (TDI) and the Development of Site-specific Nutrient Criteria (T. J. Belton)

Both the diatom indicators of enrichment and the measured nutrient concentrations showed a marked increase...

Nutrient Classes (Nutrient Level) {H}{P}

Water bodies are generally classified according to both their nutrient concentrations, their pH and also their salinity. In terms of nutrient availability diatoms are not normally found in the very low nutrient environments. The following list is in least to most nutrient levels.

Ultraoligotrophic

Oligotrophic

Mesotrophic

Eutrophic

Hypertrophic

Example:

Phytoplankton reference communities for Chesapeake Bay and its Tidal Tributaries (C. Buchanan) [2005]
...criteria for the worst nutrient classes.

Nyctipelagic {H}

Greek. nykos - night.

Pertaining to organisms that migrate into surface waters at night.

Example:

O

Oar-shaped {F}

Old English. ar.

The frustule resembles an oar with a long shaft and short blade or a paddle with a shorter shaft and a longer blade.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.

(*Pseudo-synedra* genus)

..."oar-shaped" with fine parallel striae...

Obese {F}

In combination. Latin. ob - completely. Latin. esum - to eat.

Abnormally fat or rotund.

Example:

H.M.S. Challenger - Report on the Diatomaceae
(*Nitzschia obesa* nov. var.)

...which is somewhat less obese than that just described
(*N. obesa*).

Obex {P}

Any barrier separating populations (obices).

Example:

Ob lanceolate {G}

In combination. Latin prefix. ob - towards (modern Latin. - in the opposite direction, reversed) Latin. Lancea - a lance.

Lanceolate but one end broader than the other.

Example:

Key to the Genera of Diatoms of the Inland Waterways
of Temperate North America by W. C. Vinyard.

(*Rhoicosphenia*)

...valve view oblanceolate.

Obligate {E}

A species confined to a narrow range of conditions (e.g., plants that need a very specific soil pH).

Example:

Growth rates of ten diatom species from the Barents Sea at
different irradiances and day lengths (M. Gilstad) [1990]

Ten diatom species were selected, comprising 4 arctic-
boreal species, 3 obligate arctic species, and 3 epontic
species.

Oblique {G}

Latin. - obliquus - side-long, slanting, awry.

Slanting. Not perpendicular.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.

(*Achnanthes coarctata*)

...striae distinctly punctate, 12 to 14 in 1 c.d.m.,
appearing oblique from the median portion.

Obovate, Oboval {F}

In combination. Latin. ob - towards. Latin. ovum - an egg.

Egg shaped. Narrow end usually considered to be the base.

Example:

(1) Pritchard's Infusoria

(*Gomphonema rotundatum*)

...is smooth, short and obovate laterally.

(2) A Treatise on the Diatomaceae by Henri Van Heurck.

(*Licmophora paradoxa*)

Valve short, oboval, subpyriform...

Obscure {F}

Latin. ob - over. Greek. skeue - covering.

Indistinct.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.
(*Coscinodiscus puntulatus*)

It is marked by very fine and obscure lines...

Obsolete {F}

Latin. obsolescere.

In course of disappearance.

Example:

Synopsis of the British Diatomaceae by W. Smith.
pg9 vol 1.

Obtuse {F}{G}

Latin. obtusus.

In diatom terms this most often means blunt or at least not pointed. In geometric terms an internal angle greater than 90 degrees.

Example:

H.M.S. Challenger - Report on the Diatomaceae (*Synedra philippinarum*)

The extremities are linear and obtuse, and the striae are transverse and continuous.

Occluded {F}

Latin. occludare - to shut in.

Usually referring to pores or similar looking structures that are stopped or shut off.

Example:

Biology of the Algae by F. E. Round

The perforations may be open or occluded by thin siliceous perforated plates...

Ocean color {P}

Old French. ocean,

Division of reflection of visible light from the sea surface into a number of frequency (wave length) bands corresponding to what we perceive as different colors. A number of processes, including biological productivity are closely indexed by color at the sea surface. Detection outside the visible portion of the spectrum, especially in the infrared, may be used in similar fashion.

Example:

Oceanic {H}

Latin. oceanus - the ocean.

Of the open seas. Compare with Neritic.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(Habits)

...and oceanic forms are those which live and reproduce in the open sea.

Oceanic common water {P}

Old French. ocean.

The largest water mass in the world, forming deepwater in the Indian and Pacific Oceans, with mean temperature about 1.5° C and mean salinity about 34.7 ppt.

Example:

Oceanic Conveyor Belt {O}

The global oceanic conveyor belt, is a unifying concept that connects the ocean's surface and thermohaline (deep mass) circulation regimes, transporting heat and salt on a planetary scale.

Example:

Oceanography {P}{O}

Old French. ocean.

Study of the physics, chemistry, geology and biology of the oceans.

Example:

Ocellalimbus {F}

A platelike apical pore field on the mantle.

Example:

Ocellate {F}

Latin. ocellus - little eye or eyelet.

Bearing ocelli or like an ocellus. (See Ocelli)

Example:

Note on Diatoms by F.B. Taylor.

(Structure and Markings - 65)

...has a large excentric ocellate process not completely hyaline...

Ocelli (pl.), Ocellus (sing.) {F}

Latin. ocellus - little eye or eyelet.

A thickened disc or plate of silica that has no features on its rim but is perforated with numerous densely packed pores, areolae or porelli.

Example:

Note on Diatoms by F.B. Taylor.

(Structure and Markings - 65)

...has two small ocelli at the ends of a longitudinal hyaline space...

Ocelliform {F}

Latin. ocellus - little eye or eyelet.

Bearing ocelli or looking like an ocellus.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.

(Grovea genus)

Valve discoid, showing 7 to 8 mammiform-ocelliform marginal elevations...

Octagonal {F}{G}

Greek. Okta - eight.

A shape bounded by eight sides.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(*Thalassiosira Nordenskioldii*)
Girdle view somewhat octagonal.

Offshore {H}

General term for ocean regions not in close proximity to land (cf inshore)

Example:

Diatom (< 63 µm) distribution offshore of eastern New Zealand (U. Cochran) [2010]

Life form and salinity preferences were used to identify diatoms transported offshore...

Ogee {Hy}

A reverse curve, shaped like an elongated letter S. The downstream faces of overflow dams are often made to this shape. (From the French word Ogive).

Example:

-oideae

Suffix; ending of a name of a subfamily in the botanical literature.

Example:

Oil Globules {P}

Example:

Freshwater Algae -their Microscopic World Explored
by H. Canter-Lund & J.W.G. Lund

The round bodies present are oil globules. (p124)

Oligocene {P}

In combination. Greek. oligo - few or little. Greek. kainos - new.

The epoch between the Eocene and the Miocene.

Example:

Notes on Diatoms by F.B. Taylor

...the Oligocene of Bohemia, Trinidad and Oamaru...

Oligohaline {H}{P}

Freshwater. Or at least water that has less than 500mg Chloride/L. (more generally expressed as 0.5-5ppt)

Example:

Nitrogen Biogeochemistry in the oligohaline Zone of a New England Estuary (R. M. Holmes) [2000]

...required by oligohaline diatoms, but that groundwater may make some contribution.

Oligohalobous {H}{P}

Greek. oligos - little or few.

Freshwater. Or at least water that has less than 500mg Chloride/L.

Example:

Diatoms in Eastern Australia by Neils Foged.

Oligomictic {H}

Greek. oligos - little,

Applied to lakes that are seasonally stable, only rarely (if at all) exhibiting overturn.

True of most tropical lakes with very warm surface waters.

Example:

Interactions between nutrient availability and climatic fluctuations as determinants of the long-term phytoplankton community changes in Lake Garda, Northern Italy (N. Salmaso) [2010]

The positive impact of harsh winters on the development of diatoms and cyanobacteria of this deep oligomictic lake may be counterintuitive...

Oligosaprobic {H}{P}

A zone where some nutrients persist but oxidation of organic elements is complete.

Example:

Assessment of Water Quality, Benthic Invertebrates, and Periphyton in the Threemile Creek Basin, Mobile, Alabama, 1999-2003 (A. K. McPherson)

During September 2000, •-saprobic and •-mesosaprobic diatoms were more common than oligosaprobic diatoms at all sites...

Oligotrophic {H}{P}{E}

In combination. Greek. oligos - little or few. Greek. trope - nourishment.

Having low levels of nutrients. (Compare with Dystrophic, Eutrophic and Mesotrophic)

Example:

The Morphology of the Diatom Frustule

by H.G. Barber & E.Y. Haworth (Peronia genus)

...occurs in water of acid or oligotrophic character.

Oogamous {P}

In combination. Greek. oion - egg. Greek. gamous - marriage.

The genesis and development of the ovum.

Example:

Algae and Fungi by C. J. Alexopoulos & H. C. Bold.

...reproduction is oogamous, the sperms being minute and uniflagellate.

Ooze {P}

Ole English combination of wos - juice and wase - mud.

Fine-grained deepsea sediments (siliceous or calcareous) of biological origin (containing greater than 30% of the naming constituent; cf diatom ooze, foraminiferan ooze, Globigerina ooze, pteropod ooze, radiolarian ooze).

Example:

Origin of Diatom Ooze Belt in the Southern Ocean:

Implications for late Quaternary paleoceanography (L. H. Burckle) [1987]

Although not noted on the map, much of the Ross Sea floor (particularly the western part) is covered by diatom ooze.

Opaline Silica {P}

Latin.opalus. Latin. silex:silicis - flint..

A non-crystalline form of silica (hydrated Silicon Dioxide) in diatom walls which is of a similar structure to the silica comprising the mineral opal.

Example:

Freshwater Algae - Their Microscopic World Explored
by H. Canter-Lund & J.W.G. Lund.

Opaque, Opacity{F}

Latin. opacus.

Cannot be seen through. Not transparent.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(*Navicula Northumbrica*)
Central nodule opaque, very conspicuous.

Optimal {P}

Latin. optimus - best.

Most favorable; pertaining to the levels of environmental factors best suited for growth and reproduction (cf pessimal, optimal foraging, optimal yield, etc).

Example:

Revealing the Molecular Secrets of Marine Diatoms (Angela Falciatore) [2002]
...day length are optimal for diatom photosynthesis...

Oral Opening {F}

Latin. oris - the mouth. Old English - open.

Pritchard mistook the Central Opening of a valve to be a mouth, hence Oral Opening.

Example:

Pritchard's Infusoria
(*Achnanthes brevipes*)
Single specimens, when laying on the ventral side, appear spindle-shaped, and shew the oral opening in the middle.

Orbicular {F}

Latin. orbis - a circle.

Approximately circular or spherical.

Example:

British Diatomaceae by Arthur Scott Donkin.
(*Navicula Clepsydra*)
...striae oblique, granular, distinct, 25 in .001",
reaching to the median line, much shortened (so as to
leave an imperfectly orbicular blank space) around the
central nodule;...

Organic detritus {Hy}

Any loose organic material in streams such as leaves, bark, or twigs removed and transported by mechanical means, such as disintegration or abrasion.

Example:

The characteristics and source of laminated mud at Lake Barrine, Northeast Australia (D. Walker) [1999]
The contents of the laminae (e.g., total lake products, organic detritus, diatoms, pollen grains, vivianite crystals) distinguish two contrasting types,...

Orifice {F}

In combination. Latin. oris - mouth. Latin facere - to make.

Strictly - Small mouth-like openings, but mostly openings of any sort or shape.

Example:

Notes on Diatoms by F.B. Taylor

88 - ...along the inner edge of the border having orifices at the angles of the valve.

Ornamented {F}

Latin. ornare - to adorn.

To be adorned with...

Example:

Key to the Genera of Diatoms of the Inland Waterways of Temperate North America by W. C. Vinyard.

(*Cylindrotheca*)

...with distinctly spiral ornamentation...

Ornata {F}

Latin. ornare - to adorn.

See example for explanation.

Example:

New and Rare Diatoms from Oregon and Washington by H. E. Sovereign.

(*Pinnularia platycephala*)

...having a series of puncta in the axial area opposite the striae about two thirds the length of the valve forming the arrangement called "ornata" markings.

Osmotrophs (Osmotrophic) {P}

Organisms that feed on dissolved organic molecules absorbed from the environment.

Example:

Effects of increased atmospheric CO₂ on small and intermediate sized osmotrophs during a nutrient induced phytoplankton bloom (A. I. Paulino) [2008]

The initial nutrient pulse resulted in a community shift from small sized (=picoplankton: heterotrophic bacteria, *Synechococcus* and picoeukaryotes) to intermediate (*Emiliania huxleyi* and other eukaryotic nanoflagellates) in addition to the big sized (diatoms) osmotrophs.

Ostiola {F}

Latin. ostium.

A mouth-like opening.

Example:

Synopsis of the British Diatomaceae by W. Smith.

(Introduction)

...and that the terms applied to these nodules by different authors, implying that they are openings or ostiola, are altogether inadmissible.

Outer Fissure {H}

Old English. ute. plus Latin. fissum - to cleave.

For explanation see example below.

Example:

The Algae - A review by G. W. Prescott.

The raphe or furrow, if seen in transverse section of the wall, would show a '<'-shaped groove. The upper arm of the

'<' is called the outer fissure, the lower the inner fissure.

Outer Plate {F}

Old English. ute. plus Greek. platys - broad.

Nearly always referring to Centric forms where the valve is constructed of two plates, which may become separated.

Example:

The Diatomaceae of Philadelphia and Vicinity
by C.S. Boyer.

(*Aulacodiscus*)

...one, a mesh of large radiating, angular cells, the outer plate, and the other...

Outer Zone {F}

Old English. ute. plus Latin. zona - a girdle

Nearly always referring to Centric forms where the ornamentation of the valve face clearly distinguishes two zones, the inner (central) zone and the outer (peripheral) zone.

Example:

The Diatomaceae of Philadelphia and Vicinity
by C.S. Boyer.

(*Pseudauliscus spinosus*)

The outer zone with smaller apiculi...

Outfall {E}

Wastewater discharge point.

Example:

An investigation of the effect of sewage outfall on algal communities in the Cheboygan River (D. Crockett) [1987]

The sewage outfall does not seem to be affecting the biomass of the diatom communities.

Outflow Channel {Hy}

A natural stream channel which transports reservoir releases. Also a man-made escapement for overflow water.

Example:

Observations on the spawning, development and rearing of the South African abalone *Haliotis midae* (A. B. Genade) [1988]

Benthic diatoms scraped from the bottom of the outflow channel of the oyster nursery

Outlet {Hy}

An opening through which water can be freely discharged from a water body.

Example:

Quantifying the impact of freshwater diatom productivity on silicon isotopes and silicon fluxes: Lake Myvatn, Iceland (S. Opfergelt) [2011]

These seasonal diatom blooms can be modeled by an open system of Si uptake and affect Si fluxes at the outlet of the lake.

Outwash {Hy}{E}

Soil material washed down a hillside by rainwater or meltwater and deposited upon more gently sloping land. e.g. an Outwash Plain

Example:

The Diatom History of an Urban Lake: Summit Lake, Akron, Ohio (J. C. Gray) [1986]

...coarse sand and gravel with clay typical of glacial outwash. This layer contained no diatoms indicating the pre-developmental stage of the basin.

Outwelling {H}

Enrichment of coastal waters by flushing of nutrient materials from coastal estuaries and embayments (cf upwelling).

Example:

Viable diatoms and chlorophylla in continental slope sediments off Cape Hatteras, North Carolina (L. B. Cahoon) [1994]

Surface waters outwelling from Chesapeake Bay can carry organic material to the ...

Ova grains {F}

Latin. ovum - an egg. plus Latin. granum - seed.

Example:

Pritchard's Infusoria
(*Navicula*)

The ova grains are in the middle and of a yellow-brown colour.

This sort of reference is encountered throughout Pritchards work and would appear to refer to the Chloroplasts.

Oval, Ovate {G}

Latin. ovum - an egg.

Rounded but elongated with both poles exhibiting the same curvature.

Example:

H.M.S. Challenger - Report on the Diatomaceae (*Surirella thaitiana*)

It possesses an oval profile, and is provided with...

Overland flow {Hy}

The part of surface runoff flowing over land surfaces toward stream channels or the reverse thereof, as part of flood control processes.

Example:

Algae Removal by the Overland Flow Process (J. L. Witherow) [1983]

The overland flow process reduced the number of all species of algae and diatoms in the lagoon effluent.

Oxbow, Oxbow Lake {Hy}{E}

A bow-shaped lake formed in an abandoned meander of a river.

Example:

Projected Reconstruction of Paleofloods in the White River Wildlife Refuge using diatoms (R. Bhattacharya)

Variations in fossil diatom assemblages from oxbow lakes of the White River in the White River Wildlife Refuge...

Oxygen deficit layer {P}

See oxygen minimum layer.

Example:

Oxygen isotope ratio {P}

The ratio of $^{18}O_2$ to $^{16}O_2$, used to estimate temperatures that existed at particular periods in earth history, eg from the ratio of these isotopes in fossil marine shells (from the oxygen in the $CaCO_3$). Enhancement of $^{18}O_2$ indicates warmer temperatures.

Example:

The isotopic composition of valves and organic tissue of diatoms grown in steady state cultures under varying conditions of temperature, light and nutrients (K. Kowalczyk) [2006]

...isotope fractionation between diatomaceous silica and water. This finding is very important for further applications of the oxygen isotope ratio of diatom...

Oxygen minimum {O}

Zone in which respiration and decay reduce dissolved oxygen to a minimum, usually between 800 and 1000m but see Oxygen Minimum Layer.

Example:

Origin of laminated diatom ooze in King George Basin sediments from Bransfield Strait, Antarctica (H. I. Yoon) [2001]

...matter preservation in the laminated diatom ooze be due to the expansion of the oxygen minimum zone and a weakening bottom-water circulation...

Oxygen-minimum layer (Oxygen Minimum Zone) {P}

A markedly hypoxic, in some areas thick (hundreds of meters vertically), layer of oxygen poor water, typically between 100 and 1000 m below the surface. Oxygen minimum layers are especially pronounced in the eastern tropical Pacific, the northern Indian Ocean, and the eastern tropical Atlantic.

Example:

The Deep Indian Ocean Floor (A. W. J. Demopoulos)

The deep oxygen minimum layer allows great quantities of detrital material to sink to the deep sea, without being recycled by mid-water consumers; this results in an intense flux of labile organic material to the deep-sea benthos.

P

pH {P}

A number used to represent a degree of alkalinity or acidity. This number was at one time the log to base 10 of the reciprocal of the concentration of hydrogen ions. i.e. Potential Hydrogen. However, it is now related by formula to a standard measured

solution of potassium hydrogen phthalate - standard value 4 at 15 degrees Celsius.

Example:

Freshwater Algae - Their Microscopic World Explored
by H. Canter-Lund & J.W.G. Lund.

pH Tolerance

pH tolerances are assigned terms rather than use of the actual pH value as used to be the case. To help in working out these terms the following list might be useful. It lists the terms used for toleration of particular levels from most tolerant of acid (low pH) conditions to alkali loving (high pH).

Acidiobiontic

Acidiophilous

Circumneutral

Alkaliphilous

Alkalibiontic

Example:

ppm (Parts per million) {Hy}

Unit of concentration equal to one milligram per kilogram or one milligram per litre.

Example:

ppt (Parts per Thousand){P}

An abbreviation for Parts per Thousand. Often used to describe the degree of salinity.

This term has mostly been superceded by mg/L (milligrams per litre).

Example:

Pacific Ocean {H}

Largest of the world's oceans (179.7 X 106 km²). It is also (on average) the coldest (3.36° C), deepest (4,028 m) and least saline (34.62 ppt).

Example:

The role of nutricline depth in regulating the ocean carbon cycle (P. Cermeño) [2008]

For instance, the low silicate-to-nitrate input ratios characteristic of the equatorial Pacific Ocean have been suggested to limit diatom productivity.

Palingenesis (Palingenetic) {P}

Greek. palin - back,

Ancestral; of remote or ancient origin. (Pertaining to evolution)

Example:

Pallisade {F}

A row of features. Normally used to refer to a row of features along the mantle.

Example:

Rines, J.E.B. & P.E. Hargraves - The Chaetoceros
- Bibliotheca Phycologica (79)

Paludal (Palustrine){H}{E}

Latin. paludis - a marsh.

Pertaining to marshes (cf helic, palustrine).

Example:

Characteristic and distribution of coal-bearing sediments

in Lom Depression (M. Yaneva) [2010]
Results from diatom analysis confirm this conclusion and indicate that the basin was eutrophic freshwater lake. The temperature regime was similar to the lakes of the moderate latitudes. The existence of lacustrine-paludal environment is proved also by presence of thick clay deposits in all boreholes from Momin brod area.

Palustrine {H}

Latin. paludis - a marsh.

Pertaining to wet or marshy habitats. Lentic habitats substantially filled with aquatic vegetation.

Example:

Lake-level and salinity reconstruction from diatom analyses in Quillagua formation (late Neogene, Central Andean forearc, northern Chile) (R. Bao) [1999]

High percentage values of periphytic diatoms, mainly epiphytes, indicate permanent palustrine conditions with abundance of macrophytes.

Palustrine wetlands {Hy}

Freshwater wetlands including open water bodies of less than 20 acres in which water is less than 2 meters deep; includes marshes, wet meadows, fens, playas, potholes, pocosins, bogs, swamps, and shallow ponds; most wetlands are in the Palustrine system.

Example:

Development, calibration, and validation of a littoral zone plant index of biotic integrity for lacustrine wetlands (Paul E, Rothrock) [2007]

...which developed a plant index of biotic integrity for aquatic plant assemblages in riverine and palustrine wetlands along the southern shore of Lake Michigan.

Panduriform {G}

Greek. pandoura - a 3-stringed instrument.

Having a 'waist' somewhere in the valves length. Fiddle-shaped. e.g. Diploneis.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.

(*Amphora angularis*)

Frustule panduriform with apices tapering...

Papilla(e) {F}

Latin. diminutive of papula.

A small nipple-like protuberance. Often seen inside the hexagonal features of Trigonium. (Trigonium quinquelobatum for instance)

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(*Eupodiscus* genus)

The whole decorated with papillate knobs opening to the outside.

Papilliform {F}

Latin. diminutive of papula.

In the form of a small nipple-like protruberance.

Example:

Report on the Irish Diatomaceae by E. O'Meara.

(*Navicula papillifera*)

Valve elliptical-lanceolate, ends produced, papilliform...

Papillose, Papillate {F}

Latin. diminutive of papula.

(ose) like a papilla, (ate) bearing papilla. See above.

Example:

The Morphology of the Diatom Frustule

by H.G. Barber & E.Y. Haworth (*Surirella caproni*)

Papillose elevations with spine, on apical axis...

Parachute-like {P}

Example:

Freshwater Algae -their Microscopic World Explored

by H. Canter-Lund & J.W.G. Lund

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Paradox of the plankton {P}

Phrase coined by the limnologist G. E. Hutchinson: the observation that recognizable niche axes available to planktonic organisms (especially phytoplankton) appear to be too few to account for existing diversity in light of the competitive exclusion (qv) principle.

Source:

The Paradox of the Plankton

G. E. Hutchinson

The American Naturalist, Vol. 95, No. 882. (May - Jun., 1961), pp. 137-145.

The problem that is presented by the phytoplankton is essentially how it is possible for a number of species to coexist in a relatively isotropic or unstructured environment all competing for the same sorts of materials. The problem is particularly acute because there is adequate evidence from enrichment experiments that natural waters, at least in the summer, present an environment of striking nutrient deficiency, so that competition is likely to be extremely severe.

According to the principle of competitive exclusion (Hardin, 1960) known by many names and developed over a long period of time by many investigators, we should expect that one species alone would outcompete all the others so that in a final equilibrium situation the assemblage would reduce to a population of a single species.

Parallel {F}{G}

Greek. parallelos.

Extended in the same direction and equidistant at all points. Usually used when describing striae and margins.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.
(*Amphora binodis*)

The inner lines run nearly parallel to the outer margins...

Parasitic {F}

In combination. Greek. para - beside. Greek. sitos - food.

An organism that lives upon or in another organism, deriving some or all of its nourishment from that organism without rendering any reciprocal service.

Example:

The Diatomaceae of Philadelphia and Vicinity
by C.S. Boyer.

(*Fragilaria parasitica*)

Parasitic on other diatoms.

Paratype {F}

In combination. Greek. para - beside. Greek. typos - model.

Example:

Some Fossil Diatoms from Barbados
by G. Dallas Hanna & A.L. Brigger

(*Helminthopsis sokoli*)

The paratype is an edge view of an individual valve...

Parent-cell {P}

French. parent - kinsman.

The larger frustule formed after self-division.

Example:

Littoral Diatoms of Chichester Harbour

by N. Ingram Hendey.

...new valves for the daughter-cells must conform more or less to the pattern of the parent-cell.

Parietal {F}, Parietes {P}

Latin. paries - a wall or partition.

Adjacent to the wall of a cell. Often used to describe the position of chloroplasts.

Example:

A Treatise on the British Freshwater Algae

by G.S. West & F.E. Fritsch.

(*Melosira*)

Chromatophores. small, numerous, parietal, and plate-like.

Partecta (pl.), Partectum (sing.) {F}

Latin.

A compartment found within the girdle band of *Mastogloia*.

Example:

The Morphology of the Diatom Frustule

by H.G. Barber & E.Y. Haworth (*Mastogloia*)

Each valve bears two sets of internal compartments

(partecta or loculate chambers) along the valve margins.

Parthenogenetic {P}

Example:

Notes on Diatoms by F.B. Taylor
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Paternoster Lakes {E}

A line of mountain valley lakes carved by glacial erosion. From the air they resemble beads on a cord.

Example:

Peak stage {Hy}{P}

Maximum height of a water surface above an established datum plane. Same as peak gage height. Also refers to the point when a species reaches its maximum density.

Example:

(1) Water Resources Data Colorado Water Year 2003 Volume 2: Colorado River Basin (R. M. Crowfoot)

The maximum instantaneous peak stage occurring for the water year...

(2) Zooplankton grazing on bacteria and phytoplankton in a regulated large river (Nakdong River, Korea) (H. W. Kim) [2000]

...also observed that the small-sized phytoplankton community passed their peak stage in mid-spring, followed by the dominance of colonial green algae and large diatoms.

Pear-shaped {F}

Old English. pere.

A pome(apple like fruit body), extruded at one side into a taper.

Example:

Report on the Irish Diatomaceae by E. O'Meara.

(*Synedra capitata*)

...terminating towards the centre in small pear-shaped nodules...

Pearls {F}

French. perle.

A lustrous globule, granule or burr.

Example:

Notes on Diatoms by F.B. Taylor

76 - ...to be resolved on further magnification into rows of distinct beads or pearls.

Peat {Hy}{E}

A highly organic soil, composed of partially decomposed vegetable matter.

Example:

Diatom-based pH reconstruction studies of Holocene sediments of peat bogs in Central Sredna Gora Mountains. (R. Stancheva) [2004]

A total 218 diatom taxa (species, varieties and forms)

were identified.

Pectin, Pectic {P}

Greek. pektikos - congealing.

A mixture of carbohydrates normally associated with the cells walls of fruits.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(Page 25)

Unicellular algae having an out skeleton composed of pectin impregnated with silica...

Pectinate {F}

Latin. pecten - a comb.

Toothed like a comb.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(Rutilaria genus)

Margins of valve pectinate, ciliate.

Ped(d)icle, Pedicel, Pedicle {F}

Latin. pediculus - a little foot.

A small stalk.

Example:

Pritchard's Infusoria (Gomphonema genus)

...fixed upon a distinct filiform pedicle, and develop themselves...

Pediculate {F}

Latin. pediculus - diminutive of pedis - a louse.

Stalked.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(Brebissonia genus)

Frustules pediculate.

Pediform {F}

Latin. pediculus - a little foot.

Being attached by a little stalk.

Example:

The Morphology of the Diatom Frustule

by H.G. Barber & E.Y. Haworth (Aulacodiscus)

Pediform processes showing radial hyaline area...

Pedonic {H}

Greek. pedion - ground.

Pertaining to an inhabitant of the bottom community of a freshwater lake.

Example:

Peduncle {P}

Latin. pedis - a foot.

A narrow stalk.

Example:

Portfolio of Drawings etc. by Thomas Bolton.

(Synedra pulchella)

...clusters of the beautiful peduncled fan-shaped...

Pedunculate {P}

Latin. pedis - a foot.

Connected by a narrow stalk - a peduncle.

Example:

Notes on Diatoms by F.B. Taylor

(Manner of Growth - 33)

...the living frustules are at first stipitate or pedunculate,...

Pelagic (H){O}{E}

Greek. pelagos - sea.

Living in the surface waters or middle-depths of the ocean.

Example:

The Open Sea by A. Hardy.

..we can well imagine the different stocks evolving from different pelagic ancestors, as new varieties arose...

Pelagic biogeography {P}

Greek. pelagos - sea.

Study of the distribution of pelagic (qv) organisms incorporating both historical and ecological approaches to biogeography.

Example:

Pelagic region {H}

Greek. pelagos - sea.

A biogeographically definable subdivision of the global pelagic environment.

Example:

Pelagium {H}

Greek. pelagos - sea.

A sea-surface community of the open ocean (cf neuston).

Example:

Pellicle {F}

Latin. pellicula. diminutive of pellis - skin.

A thin skin or film - a pellicle.

Example:

The Size of Diatoms. I. The diameter variation of *Rhizosolenia styliformis* and *R. alata* in particular and of pelagic marine diatoms in general

(R. S. Wimpenny)

Consider out postulated diatom in its newly formed auxospore stage. At this time the auxospore is a protoplast surrounded by a thin pellicle...

Pellicular {F}

Latin. pellicula. diminutive of pellis - skin.

Having a thin skin or film - a pellicle.

Example:

New Species of Fossil or Pelagic Marine Diatoms

by J. Brun. Trans. J. W. Barker.

(*Biddulphia vitrea*)

Silica pellicular, of pale yellow tint when dry.

Pellicular water {Hy}

(1) The film of water left around each grain or fracture surface of water-bearing material after gravity drainage. (2) Water of adhesion. (3) Water that can be extracted by root absorption and evaporation but cannot be moved by gravity or by the unbalanced film forces resulting from localized evaporation and transpiration.

Example:

Dynamics of fluids in porous media (Jacob Bear) [1988]
Nonmoving, or pellicular, water in the intermediate zone is held in place by hygroscopic and capillary forces.

Pelochthium {H}

A mud-bank community.

Example:

Pennale {G}

Latin. penna - a feather.

One of the two orders of diatoms. See also Centrale.

See Pennate below

Example:

The Algae - A review by G. W. Prescott.

Another such order is the Pennales...

Pennate(ae) {G}

Latin. penna - a feather.

One of the two orders of diatoms. See also Centricae.

Symmetrical about a long axis

Example:

The Biology of the Algae by F. E. Round.

This may indicate that the Centric group is older than the Pennate group,...

Pentagon, Pentagonal, Pentangular{G}

Greek. pentagramma.

Five sided when in valve view

Example:

Simbirsk Diatoms by Otto N. Witt

(*Actinoptychus delicattisimus*)

In the middle of the shield is a pretty large pentagonal star-shaped structureless area;...

Perched ground water {Hy}

Unconfined ground water separated from an underlying main body of ground water by an unsaturated zone.

Example:

Ground Water Investigation of the Mountain Home Plateau, Idaho (M. A. Norton)

The direction of flow in the perched ground water system is towards the southwest.

Perennial stream {Hy}

A stream that normally has water in its channel at all times (lotic).

Example:

Species Composition and Some Ecological Notes on Diatom Communities of a Lotic Environment in Tarhunāh, Libya (M. A. Khan) [1994]

A lotic environment (perennial stream) in Ain-Scersciara, Tarhunrih in northwest Libya was studied for the species composition of diatom communities and...

Per(e)valvar Axis {G}

In combination. Latin. per - through the midst of. Latin. valvae - leaves or folds.

A line connecting the mid point of the two valves of a frustule.

Example:

Littoral Diatoms of Chichester Harbour

by N. Ingram Hendey.

...Also that the length of the apical axis decreased not only absolutely but also relatively more than the width of the perivalvar axis.

Perforation, Perforated {F}

In combination. Latin. per - through. Latin. forare - to bore.

A hole through a plane.

Example:

A Treatise on the British Freshwater Algae

by G.S. West & F.E. Fritsch.

(*Denticula*)

...the transverse septa are fused with the edges of the perforations in the adjacent longitudinal septum;...

Perigean tides {P}{O}

Greek. perigeos - round the earth,

The tides (qv) of increasing amplitude occurring at the time when the moon is nearest the earth.

Example:

The 1800-year oceanic tidal cycle: A possible cause of rapid climate change (C. D. Keeling) [2000]

Maxima in perigean tides occur when the moon is close to the ecliptic.

Periphyton, Periphytic {H}{Hy}{E}

In Combination. Greek. peri - around. Greek. phyton - plant.

Example:

The Algae - A review by G. W. Prescott.

They appear in the euplankton, in the tycho plankton, as periphyton...

Perizonium {P}

In combination. Greek. peri - around. Greek. zone - a girdle.

A pectin/silica membrane.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour. (Reproduction)

Inside this the auxospore forms a membrane, the perizonium, composed of pectic substances...

Permian {P}

Named after Perm, in Russia where it is abundant.

The uppermost Palaeozoic system.

Example:

Notes on Diatoms by F.B. Taylor

...and that he found diatoms in coal from Newcastle (Permian), and in coal of the Carboniferous age...

Persistent {F}

In combination. Latin. per - through. Latin. sistere - to stand.

Usually used to describe a line that is unbroken.

Example:

Report on the Irish Diatomaceae by E. O'Meara.
(*Plagiogramma*)

...striae sometimes interrupted in the middle, sometimes persistent; filaments short.

Pervalvar Axis {F}

Also known as the long axis running from pole to pole.

Example:

Rines, J.E.B. & P.E. Hargraves - The Chaetoceros
- Bibliotheca Phycologica (79)

Pervious {F}

In combination. Latin. per - through. Latin. via - a way.

Open, or broken - with a way through. Usually broken by the median line or raphe.

Example:

Report on the Irish Diatomaceae by E. O'Meara.
(*Denticula*)

...costate; costae not pervious.

Pervious Striate {F}

Latin. pervius - through. Latin. stria - a furrow, groove or channel.

A term applied to a valve where the striae are interrupted in their progress by a median line or raphe.

Example:

Van Heurck Treatise.

Petal {F}

Greek. petalon - a leaf.

A word used to describe the shape of spaces or hyaline areas on the valve. Like the petals of a flower.

Example:

Some Fossil Diatoms from Barbados
by G. Dallas Hanna & A.L. Brigger
(*Entogonia virsuta*)

In the center triangle there is a beautiful rosette of elongate petals...

Petri dish {F}

Example:

A Beginner's Guide to Freshwater Algae
by H. Belcher & E. Swale.

The shell or frustule is like a box, formed of 2 overlapping glassy portions as in a Petri dish or a date box.

Phaoplankton {H}

The surface plankton (qv) of the upper photic zone, within the top 30 m of the water column. (named by Bianco [1909])

Example:

Phenotype {P}

Greek. phainein - to show, Greek. typos - model.

The totality of expressed characteristics of an individual (whether observed or measured), as a result of interaction between the genotype (qv) and the environment (cf ecophenotypic).

Example:

Morphological abnormalities of diatom silica walls in relation to heavy metal contamination and artificial growth conditions (E. Falasco) [2009]

Teratological forms of diatoms are non-adaptive phenotypic abnormalities caused by various environmental stresses.

Photic Zone {H}{O}{E}

Greek. photos - light. plus Greek. zone - a girdle.

The surface waters down to the limit of penetration of sunlight, i.e. 600 or 700 fathoms.

Also layer of a body of water that receives ample sunlight for photosynthesis; usually less than 100m

Example:

The Ocean by Sir John Murray

This superficial layer affected by sunlight is called the photic zone of the ocean...

Photoperiodic(ism) {P}{E}

Greek. photos - light,

The response of an organism to periodic often rhythmic changes in either the intensity of light, or, more usually, to increasing or decreasing daylength.

Example:

Control of Algal Life-history by Daylength and Temperature (K. Luning) [1980]

At northern latitudes, temperature may be too low in those autumn months in which daylength has become short enough for photoperiodic induction of sporangium formation

Photosynthesis {P}{O}{E}

In combination. Greek. photos - light. Greek. syn - together. Greek. thesis - a placing.

The building up of complex compounds by the harnessing of the energy of light by the chlorophyll apparatus.

Example:

The Plant Cell by William A. Jensen.

The first step in photosynthesis is the absorption of

light.

Phototaxis {P}

Greek. photos - light,

Movement in response to light conditions.

Example:

Phototactic and photokinetic Action Spectra of the Diatom *Nitzschia communis* (W. Nultsch) [1971]

In diatoms, photokinesis and phototaxis have not been investigated extensively.

Phototrophic, Phototropism {P}{E}

Greek. photos - light, Greek tropos - turning.

Pertaining to organisms that obtain their energy from light reactions; autotrophs (qv) (cf chemotrophs, heterotrophs).

Example:

Distribution of phototrophic populations and primary production in a microbial mat from the Ebro Delta, Spain (M. Martínez-Alonso) [2004]

These mats are composed of three pigmented layers of phototrophic organisms, an upper brown layer mainly composed of *Lyngbya aestuarii* and diatoms, an intermediate green layer of the cyanobacterium *Microcoleus chthonoplastes*, and an underlying pink layer of a so-far unidentified purple sulfur bacterium.

Phreatic {H}{Hy}

Greek. phrear - well.

Pertaining to ground water.

Phreatic Line – a line of seepage

Phreatic Surface – ground water at atmospheric pressure

Phreatic Water – Water that supplies wells and springs

Phreatic Zone – a locus of points where soil pores are filled with water (zone of saturation)

Example:

Characterization and preservation of silt-laden soils in the humid depressions of Hatainville's dune massif (Manche, France) (P. Le Gouée) [2005]

As local phreatic waters are renewed over winter months, intra-dune depressions are recurrently filled up. The appearance of shallow pools gives life to aquatic ecosystems where diatoms and characeae can develop.

Phreatophyte {Hy}

A plant that habitually obtains its water supply from the zone of saturation, either directly or through the capillary fringe.

Example:

- phyceae

Suffix; the ending of a name of a class in botanical nomenclature.

Example:

- phycidae

Suffix; the ending of the name of a subclass in botanical nomenclature.

Example:

Phycocoenology {P}

Greek. phykos - seaweed,

Study of algal communities.

Example:

Phylogeny (Phylogenetic) {P}

In combination. Greek. phylon - a race. Greek. genesis - origin.

Pertaining to the evolutionary history of an organism.

Example:

Comments on recent progress toward reconstructing the diatom phylogeny (A. J. Alverson) [2005]

A well-supported phylogenetic tree provides the best basis for such comparisons because closely related taxa will have many similar attributes (morphological, physiological, ecological, etc.) simply because they share a recent common ancestor.

Phytic {P}

Greek. phyton - a plant

Example:

Practical Directions for Collecting, Preserving, etc. by Mead Edwards, Johnston & Smith

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Phytobenthos {P}

Greek. phyton - plant, Greek. benthos - depth.

Autotrophic benthic organisms.

Example:

Ecological classification of macrophytes and phytobenthos for rivers in Germany according to the Water Framework Directive by (J. Schaumburg) [2004]

By reacting to environmental conditions, phytobenthos gives an integrated picture of influences to the water body and may tell us about the status of nutrients, thermal and oxygen conditions, salinity, acidity, and toxic influences.

Phytogeography {P}

Greek. phyton - plant,

The biogeography of autotrophs, especially plants. This branch of biogeography is also known as floristics.

Example:

A water quality index for use with diatoms in the assessment of rivers (G. Bate) [2004]

Of importance is the fact that the data show that the maximum values of the Swartkops River data cover 90 to 100% of all the values taken from 212 river sites in all

the obvious phytogeographical regions of South Africa.

Phytoplankton {H}{O}{E}

In combination. Greek. phyton - plant. Greek. planktos - wandering.

Microscopic plant forms of plankton

Example:

The Biology of the Algae by F. E. Round.

The phytoplankton flora of water masses also varies with depth.

Phytosociology {P}

Greek. phyton - plant,

Description of plant communities, especially their classification based on floristic rather than life form or other physiognomic criteria.

Example:

Diatom typology of low-impacted conditions at a multi-regional scale (V. Gosselain)

In Europe, the first classification of benthic diatom assemblages, using the methods of phytosociology, has been established for the Ardennes...

Phytotelmic {H}

Greek. phyton - plant,

Used of organisms that inhabit small pools of water within or upon plants (phytotelmata).

Example:

Picoplankton {P}

Example:

Freshwater Algae - Their Microscopic World Explored
by H. Canter-Lund & J.W.G. Lund.

Pillow-shaped {F}{G}

Old English. pyle.

A term sometimes used to describe a frustule that is shaped like a full sack.

See also Cushion-shaped.

Example:

Diatoms of British Coastal Plankton by J. B. Sykes.
Cell markedly pillow-shaped, being 2-2.5 times as long as it is broad.

Pinhead-like {P}

Example:

Freshwater Algae -their Microscopic World Explored
by H. Canter-Lund & J.W.G. Lund
...towards the centre of the diatom cell where they end in a pinhead-like swelling. (p124)

Pinnate {F}

Latin. pinna - a feather.

Shaped like a feather.

Example:

The Diatomaceae of Philadelphia and Vicinity
by C.S. Boyer.
(Pennatae)
Structure pinnate, not concentric.

Pinnulae {F}

Latin. pinna - a feather.

Small lobes arranged either side of a raphe.

Example:

H.M.S. Challenger - Report on the Diatomaceae (Pinnularia
genus)

...those naviculoid forms whose valves were ornamented
with pinnulae or costae and not by rows of granules.

Placcochromatic {P}

In combination. Greek. chroma - colour.

See also Coccochromatic

Example:

The Diatomaceae of Philadelphia and Vicinity
by C.S. Boyer.

...chlorophyll-like bodies which occur in one or several
bands (placcochromatic), or...

Diatoms of the British Coastal Waters by N. I. Hendey.
p. 3

Plagio -

Greek. plagios - oblique.

Prefix meaning oblique, as in plagiotropism, an orientation response at an oblique
angle to the vertical.

Example:

Plait {F}

Latin. plicatum - to fold.

A pleat or zig-zag fold.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(Achnanthes longipes)

...the striae interrupted by longitudinal plaits.

Plane {G}{F}

Latin. planum - a flat surface.

A surface on which any two points joined together still lie on that same surface.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.
(Pyxidicula cruciata)

...cells running round the hemisphere in a plane at right
angles to the junction of the two halves.

Plankter {P}

Greek. plankton - wandering.

An individual planktonic organism; phytoplankter; zooplankter.

Example:

Marine Plankton Diatoms (Vivienne Cassie) [1959]

Each plankton organism is known as a plankter.

Plankton(ic) {H}{Hy}{O}{E}

Greek. planktos - wandering.

Floating or weakly swimming organisms at the mercy of the waves and currents.

Animals of the group are called zooplankton and the plants are called phytoplankton.

Example:

The Open Sea by A. Hardy.

...upwellings and the mixing of waters may be important in producing a richer plankton.

Plaque {F}

Thin, external layers of silica along the girdle bands.

Example:

Plasm-sac {F}

Example:

Report on the Irish Diatomaceae by E. O'Meara.

pg238 - There is first the plasm-sac, consisting of a fine colourless plasm...

Plasma, Plasmic {F}

Greek. plasma - a thing moulded.

Referring to protoplasm or mucus.

Example:

Notes on Diatoms by F.B. Taylor

91 - ...by several threads of plasma or mucus placed symmetrically...

Plasmalemma {P}

In combination. Greek. plasma - a thing moulded. Latin. lemma - matter.

A membrane just below a cell wall encapsulating the protoplast.

Example:

Valve formation in diatoms and the fate of the silicalemma and plasmalemma (R. M. Crawford) [1981]

In two species of the diatom genus *Melosira* the inner profile of the silicalemma fuses with the plasmalemma covering the "older" part of the cell...

Plastid {P}

Greek. plastis - modeller.

Another name for a Chloroplast.

Example:

The Plant Cell by William A. Jensen.

The green and brown algae have plastids consisting of a double limiting membrane...

Plate {F}

Greek. platys - broad.

See Lamina. See also Hyaline.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.

(*Amphiprora pusilla*)

Above each valve lies a plate, in shape like a narrow arc...

Plateau {F}

French.

A raised hyaline plate.

Example:

New Species of Fossil or Pelagic Marine Diatoms
by J. Brun. Trans. J. W. Barker.
(Aulacodiscus Adonis)

Rays of the processes prominent towards their last third.
where they form a hyaline plateau.

Playa {Hy}{E}

A dry, flat area at the lowest part of an undrained desert basin in which water accumulates and is quickly evaporated; underlain by stratified clay, silt, or sand and commonly by soluble salts; term used in Southwestern United States.

Example:

Evolution of Chert at Active and Passive Continental
Margins (R. Siever) [1983]

...the dominant modes of siliceous deposits are playa lake
diatomites and alkaline-lake silica-zeolite deposits

Playa lake {Hy}

A shallow, temporary lake in an arid or semiarid region, covering or occupying a playa in the wet season but drying up in summer; temporary lake that upon evaporation leaves or forms a playa.

Example:

Evolution of Chert at Active and Passive Continental
Margins (R. Siever) [1983]

...the dominant modes of siliceous deposits are playa lake
diatomites and alkaline-lake silica-zeolite deposits

Pleat {F}

Old French. pleit - to fold.

Normally a zig-zag fold. Although it can mean a braided feature.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(Amphora angularis)

...connecting zone with fine transverse striae,
interrupted by numerous pleats.

Pleistocene {H}{O}

In combination. pleistos - numerous. Greek. kainos - recent.

A late Cenozoic geologic epoch characterized by fluctuating, generally cool climates - often accompanied by glaciation - and distinctive animal species, dating from 3 million years ago until approximately 11,000 years ago.

Example:

The Biology of the Algae by F.E. Round.

...algae are nevertheless of considerable importance in
some limestones and in the formation of
diatomaceous earths both of Pleistocene and Tertiary
origin.

Pleio -

Greek. pleion - many.

Prefix meaning more.

Example:

Pleuston {H}

Greek.

Organisms permanently found at the sea surface, limited to the surface by their own buoyancy, often or typically extending into the air, and subject to wind drift (eg Sargassum, Physalia, Velella).

Example:

Plica(e) {F}

Latin. plica - a fold.

A fold.

Example:

British Diatomaceae by Arthur Scott Donkin.

(*Navicula serians*)

The "longitudinal striae", as they are termed in this species, appear to be produced by plicae or folds on the surface of the valve.

Plicate {F}

Latin. plica - a fold.

Folded. Often a fan-like folding.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.

(Cyclophora)

Frustules with girdle face plicate, showing in girdle view a...

Pliocene, Pleiocene {H}

In combination. Greek. pleion - greater, more numerous. Greek. kainos - recent.

The late Cenozoic geologic epoch following the Miocene and preceding the Pleistocene; dating from approximately 5 million until 3 million years ago.

Example:

...the Pliocene of Japan, and the important series of the Central Massive of France...

Plume {O}

A zone of dispersion.

Example:

Mesoscale response of diatom populations to a wind event in the plume of the Hudson River (T. C. Malone) [1983]

The influence of diatom production associated with the coastal plume of the...

Plumose {F}

Latin. pluma - a small downy feather.

Of a feathery or plumed appearance.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.

(*Monopsis* genus)

Striae very delicate, finely punctate, plumose, arranged in radiating flexed rows...

Point source {Hy}

A source at a discrete location such as a discharge pipe, drainage ditch, tunnel, well, concentrated livestock operation, or floating craft.

Example:

Abundance Patterns of Diatoms on Cladophora in Lake Huron with Respect to a Point Source of Wastewater Treatment Plant Effluent (R. J. Stevenson) [1982]

Epiphytic diatoms on Cladophora were collected from July to September, 1979, at various distances from a point source of municipal wastewater treatment plant effluent to Lake Huron.

Polar {F}

Latin. polaris.

Often referring to the axial poles of a valve. Sometimes referring to the polar regions of the Arctic and Antarctic.

Example:

New and Rare Diatoms from Oregon and Washington by H. E. Sovereign.

(*Pinnularia convexa*)

...the end of the valve leaving a circular polar area...

Polar Nodule {F}

Latin. polus and Greek. polos - pivot, axis. plus Latin. nodus - a knot.

An enlarged, thickened area at the apex at which the raphe terminates.

Example:

A Treatise on the British Freshwater Algae

by G.S. West & F.E. Fritsch.

...between the central and each polar nodule there extends a well-marked line...

Pole {F}

Latin. polaris.

Often referring to the axial poles of a valve. Sometimes referring to the polar regions of the Arctic and Antarctic.

Example:

New and Rare Diatoms from Oregon and Washington by H. E. Sovereign.

(*Pinnularia palousiana*)

The ridges are widest in the middle and taper towards the poles, sometimes not reaching the full length of the axial area.

Poly -

Greek. poly - much.

Prefix meaning many.

Example:

Polyangulated {F}

In combination. Greek. poly - much. Latin. angulus - bend.

Having many angles (usually referring to the valve outline)

Example:

H.M.S. Challenger - Report on the Diatomaceae.

(*Triceratium* genus)

...to embrace polyangulated frustules.

Polyculture {O}

Cultivation of more than one species of organism in an aquaculture system

Example:

Bivalves as Biofilters and Valuable Byproducts in Land-Based Aquaculture Systems (M. Shpigel) [2005]

...can be controlled, and integrated polyculture systems can save resources...

Polygonal {F}{G}

In combination. Greek. poly - much. Greek. gonia - angle.

A feature or valve that has many sides (usually more than four)

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.

(*Eupodiscus argus*)

Valve surface with polygonal chambers arranged in radial rows,...

Polyhaline {H}{P}

Greek. poly - much,

See also euryhaline. See also Venice System.

The second most saline zone of an estuary based on the Venice System of classification of brackish waters.

Having a salt concentration of greater than (>) 40,000mg Chloride/L. (more generally expressed as 18-30ppt)

Example:

Quaternary Paleoclimatology of the Black Sea basin (H. J. Schrader) [1979]

The occurrence of polyhaline, mesohaline and oligohaline diatom, silicoflagellate, ebridian and chryomonad populations in late Quaternary Black Sea

Polyhalobous {H}{P}

Having a salt concentration of greater than (>) 40,000mg Chloride/L.

Example:

Diatoms in Eastern Australia by Neils Foged.

Polymictic {H}

Greek. poly - much,

Applied to lakes where waters are circulating (overturning) virtually continuously (eg in high altitudes in the tropics).

Example:

Diatom-environmental relationships and nutrient transfer functions from contrasting shallow and deep limestone lakes in Ontario, Canada (P. Werner) [2005]

...polymictic Ontario lakes contain different diatom assemblages from deeper, dimictic lakes...

Polymorphic {P}

In combination. Greek. poly - much. Greek. morphe - form.

A term used to describe a species that has multiple distinct forms. (see also Dimorphic)

Example:

Notes on Diatoms by F.B. Taylor

(Manner of Growth - 36)

Chains of polymorphic species may contain frustules of very dissimilar contour...

Polynia, Polynya {H}

Russian. polynya.

An expanse of open water in the middle of sea ice, often permanent or semipermanent.

Example:

Polypi {F}

Latin.

Referring to the communal structures created by polyps.

Example:

Pritchard's Infusoria

(*Tessella*)

...they are developed in the form of gaping chains or zig-zag polypi clusters.

Polysaccharide {P}

In combination. Greek. poly - much. Latin. saccharum. Greek. sakcharon - sugar.

A polymer of monosaccharides which acts as an energy storage system or provides structural integrity.

Example:

Polysaccharides of marine diatoms with special reference to *Chaetoceros* species (A. Haug) [1976]

...extracellular *polysaccharides* from 4 of the diatoms were also investigated.

Polysaprobic {H}{P}

A zone where oxygen is normally absent. Zones of degradation and putrefaction.

Example:

Response of Diatom Assemblages to Human Disturbance (Leska S. Fore) [2003]

...and polysaprobic diatoms were expected to increase if inorganic or organic nutrients were present in large amounts.

Pontic {H}

Greek. Pontikus - sea. (named after the ancient Roman province of Pontus)

Pertaining to the deep sea.

Example:

Deep Sea Drilling Project Initial Reports Volume 42, Part 2 (M. V. Muratov)

...similar diatom complexes are known from Pontic deposits of the Taman and Kerch Peninsulas...

Pool {Hy}

A small part of the stream reach with little velocity, commonly with water deeper than

surrounding areas.

Example:

Porelli {F}

Latin. poros.:Greek. poros - a passage.

Small, closely packed perforations through valve. Perforations in ocelli, pseudocelli and apical pore fields are often referred to by this term.

Example:

Fine structure, taxonomy, and systematics of the centric diatom *Fryxelliella*... (A. Prasad) [1997]

...in which the porelli within the ocelli are arranged in radiating rows...

Pore, Pori {F}

Latin. poros.:Greek. poros - a passage.

A minute passage or opening.

Example:

(1) *Arachnoidiscus* by N. E. Brown.

...it will be found that they are most certainly not pores ("holes") in the membrane...

(2) Notes on Diatoms by F.B. Taylor

89 - ...and speaking of pores or pori only when...

Poris

Example:

Diatoms in Eastern Australia by Neils Foged.

(*Achnanthes neidensis* nov. spec)

The raphe valve has a straight filiform raphe with dense central poris...

Poroids {F}

Latin. poros.:Greek. poros - a passage.

Tiny cavities giving the appearance of pores but not actually perforating the valve.

Example:

Miocene and Pliocene Diatoms by W. W. Wornardt

(*Triceratium* genus)

The loculi are usually open upon the outer surface, while the lower wall or floor is furnished with poroids.

Portules {F}

Latin. porta - a gate. Latin. poros.:Greek. poros - a passage.

A small entrance. In the case of diatoms a tiny pore.

Example:

Porus {F}

Latin. poros.:Greek. poros - a passage.

Example:

Notes on Diatoms by F.B. Taylor

89 - In *Tabellaria* there is a similar porus near the centre of the valve.

Positive estuary {H}

A "normal" estuary (qv) whose waters are of lower salinity than the adjacent sea (cf negative estuary, neutral estuary).

Example:

Potable water {Hy}

Water that is suitable for human consumption.

Example:

Potamoplankton {H}

Greek. potamos - river,

Planktonic organisms of slow-moving rivers and streams.

Example:

Potamoplankton size structure and taxonomic composition:

Influence of river size and nutrient concentrations (J.

Chételat) [2006]

In terms of the broad taxonomic composition of the potamoplankton, diatoms dominated the biomass of the study rivers.

Potamous {H}

Greek. potamos - river,

Pertaining to the lower reaches of rivers and streams

Example:

Prickle {F}

Old English. prica - a point.

A thorn- or spine-like feature.

Example:

H.M.S. Challenger - Report on the Diatomaceae.

(*Thalassiosira nordenskioldii*)

...while the number of prickles or submarginal spines is much greater...

Primary production (primary productivity, primary producer) {O}{E}

Amount of organic material synthesized by organisms from inorganic substances in unit time in a unit volume of water or in a water column of water of unit area cross section and extending from the surface to the bottom

Example:#

Examination of silicate limitation of primary production

by diatoms phytoplankton in the Daihai Lake (C.W. Lü)

[2010]

Furthermore, the dominant factor for silicate limitation of Primary Production by Diatoms phytoplankton is different in different periods...

Primary Ray {F}

Latin. primus - first. plus Latin. radius - a rod.

The longest rays in a centric form. See also Secondary Ray, Tertiary Ray, Ray.

Example:

Arachnoidscus by N.E. Brown.

(Arachnoidiscus ornatus)

Valve of medium to large size. Primary rays 11-36, slender, black or white...

Primary Side {F}

Latin. primus - first. plus Old English. side.

See Views.

Example:

Notes on Diatoms by F.B. Taylor

201 - ...and English writers regard the valve as the primary side.

Primary succession {P}

Latin. primus - first. plus

Succession initiated on a newly-produced bare area, with no living remnants of a previously-existing community (if any) (cf secondary succession).

Example:

The earliest stages of ecosystem succession in high-elevation (5000 metres above sea level), recently deglaciated soils (S. K. Schmidt) [2008]

Thus, an important role of cyanobacteria (and possibly other microbes including diatoms) in primary succession in extreme environments may be to hold the soil in place.

Primary Valve {F}

Latin. primus - first. plus Latin. valva - a folding door.

The largest, topmost and probably oldest valve. See also Epivalve.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour. (Chaetoceros Laudereri)

...whose primary valve is strongly curved...

Principal Axis {G}

Latin. princeps - chief. plus Latin. axis.

Example:

Littoral Diatoms of Chichester Harbour

by N. Ingram Hendey.

...growth on any axis other than the perivalvar or principal axis was impossible.

Prism {G}

Greek. prisma - a piece sawn off.

The geometric definition - a solid whose ends are similar, equal, and parallel polygons and whose sides are parallelograms. In most cases the faces will be triangular.

Example:

Pritchard's Infusoria

(Eunotia)

...inclosed in a siliceous lorica, of the form of a prism, composed of one, two, or more pieces or valves.

Prismatic {G}

Greek. prisma - a piece sawn off.

Resembling a prism rather than acting like a prism.

Example:

Marine Diatoms of the Philippine Islands by A. Mann
(*Achnanthes cocconeiformis*)
Valves broadly elliptical with a barely perceptible
angular or prismatic outline;...

Pro -

Latin.pro - prefix meaning preceding.

Prefix meaning before, in front of, forward.

Example:

Production {P}

Latin.productum - pro - forward, ducere - to lead.

See primary productivity, secondary productivity.

Example:

Diatom production in the marine environment: implications
for larval fish growth and condition (M. A. St John) [2001]
To test the effects of diatom production on larval fish
growth...

Productivity {O}

Amount of organic material synthesized by organisms in unit time in a unit volume of
water

Example:

Diatom Growth and Productivity in an Oligotrophic Midocean
Gyre (D. M. Nelson) [1997]

Most of the previous studies have emphasized periods of
high primary productivity and diatom...

Profundal {H}

Latin. pro - forward, fundus - bottom.

Pertaining to the deep zone of a lake, below the level of effective light penetration.

Example:

Pelagic-Benthic Coupling: Profundal Benthic Community
Response to Spring Diatom Deposition in mesotrophic Lake
Erken (W. Goedkoop) [1996]

...the profundal benthic community is fueled by carbon
from sources other than fresh pelagic diatoms.

Prolific {P}

Latin. proles - offspring, facere - to make.

Abundant; able to produce large numbers of offspring.

Example:

Prolific organic SiO₂ precipitation in a solute deficient
river. (K. O. Konhauser) [1992]

...were capable of supporting prolific diatom growth, wood,
rocks, and submerged leaves serving as solid substrates.

Promunturium (Promontorium) {H}

Latin. promunturium.

A rocky seashore community.

Example:

Pros (pro) -

Latin. pro - for.

Prefix denoting the positive condition.

Example:

Process {F}

Latin. processus - advance.

Any raised or projecting feature. A peninsula-like feature.

Example:

Simbirsk Diatoms by Otto N. Witt

(*Actinoptychus seductilis*)

The double marking is in the highest degree elegant, and the processes standing on the structureless halo almost in the middle of the plates are very striking.

Produced {G}{F}

In combination. Latin. pro - forward. Latin. ducere - to lead.

A feature that is some way extended, usually becoming prominent.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.

(*Navicula lyra* var. *abrupta*)

I have hardly ever seen it with contracted and produced ends, as is so often observed in *N. Lyra*.

Prolong(ed)(ation) {F}

In combination. Latin. pro - forward. Latin. longus - long.

Lengthening or a continuation.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.

(*Surirella ovalis* v. *minuta*)

...with costae generally prolonged as far as the median line.

Prominence {F}

In combination. Latin. pro - forth. Latin. minae - projections.

A feature that sticks out or is raised in relation to its immediate surroundings.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.

(*Amphora costata*)

...which is a rather small one, with a rounded prominence in the middle close to the nodule.

Protist {P}

Greek. protistos - very first.

A single-celled (unicellular) organism which can perform all the functions necessary for its survival. Also a multicellular organism where a single cell of which can perform all the functions of the organism as a whole.

Example:

Freshwater Algae - Their Microscopic World Explored

by H. Canter-Lund & J.W.G. Lund.

Protoctist {P}

Greek. protistos - very first.

Example:

Freshwater Algae - Their Microscopic World Explored
by H. Canter-Lund & J.W.G. Lund.

Protoplasm {P}

In combination. Greek. protos - first. Greek. plasma - form.

The entire cell contents.

Example:

A Treatise on the British Freshwater Algae
by G.S. West & F.E. Fritsch.

...therupon new siliceous valves, at first very delicate,
are formed over the fresh protoplasmic surfaces.

Protoplasmic Bridge {P}

Example:

Freshwater Algae -their Microscopic World Explored
by H. Canter-Lund & J.W.G. Lund
pg130

Protoplast {P}

In combination. Greek. protos - first. Greek. plasma - form.

The whole of the cell contents.

Example:

A Treatise on the British Freshwater Algae
by G.S. West & F.E. Fritsch.

The protoplast of each individual divides at right
angles...

Protuberant {F}

In combination. Latin. pro - forward. Latin tuber - a swelling.

Bulging out or swelling.

Example:

H.M.S. Challenger - Report on the Diatomaceae
(Plagiogramma thaitiense)

...while the margins of the frustule, when viewed in the
zonal aspect, are somewhat protuberant in the centre...

Proximal, Proximate {F}

Latin. proximus - near.

Near or attached.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(Chaetoceros septentrionalis)

...their proximal parts strongly curved, their distal
parts irregularly bent...

Proximal Raphe Ends {F}

Latin. proximus - near. plus Greek. rhaps - a seam.

Raphe ends on the central nodule or near the central portion of the valve.

Example:

Diatoms from the Upper Miocene Hot Springs Limestone,
Snake River Plain, Idaho (J. P. Kocielek) [1990]

The two diatoms differ in the placement and structure of
the stigma (situated more toward the proximal raphe ends

and not an elongated...

Pruinose {F}

Latin. pruina - hoar-frost.

Having a frosted appearance. Example:

Example:

New Species of Fossil or Pelagic Marine Diatoms
by J. Brun. Trans. J. W. Barker.
(Clavicula arenosa)

The rest of the valve is sometimes pruinose.

Psammathium {H}

Greek. psammos - sand.

A strandline community of a sandy seashore.

Example:

Psammic {H}

Greek. psammos - sand.

Pertaining to sand.

Example:

Berrow Beach - The Amateur Diatomist by K. D. Kemp
...the rest of this sample which is clearly a psammic
collection...

Psammon {H}

Greek. psammos - sand.

The microscopic flora and fauna of interstitial species between sand grains.

Example:

Epiphytic diatoms of the Tisza River, Kisköre Reservoir
(K. Szabo) [2005]

...submerged plants (at Záhony sampling site, we could
only take psammon samples).

Pseudo -

Greek. pseudes - false.

Prefix meaning false.

Example:

Pseudo-oceanic {P}

Greek. pseudes - false.

Species that are members of otherwise pelagic and oceanic groups that are obligatory or facultative in their strong association with bottom communities. Commonly associated with continental slopes or island margins.

Example:

Impact of Global Warming on Oceanic and Coastal Biota (N. Ramaiah) [2008]

Pseudo-oceanic species occur maximally along shelf edges,
mixed water species occur maximally at the...

Pseudo(-o)celli, Pseudo(-o)cellus {F}

In combination. Latin. pseudo - a counterfeit, a sham. plus Original French. celle.

Group of areolae removed from the pattern of the majority of the valve decreasing in

size from areolae on the main face of the valve.

Example:

Note on Diatoms by F.B. Taylor.

(Structure and Markings - 65)

...the are variously spoken of as ocelli, nodules, pseudo-ocelli, pseudo-nodules...

Pseudo-opening {F}

In combination. Latin. pseudo - a counterfeit, a sham. plus

Example:

H.M.S. Challenger - Report on the Diatomaceae

(Porodiscus)

...with a conspicuous central pseudo-opening or pore.

Pseudofilament {P}

Strictly speaking any filament forming diatoms are Pseudofilament forming. This term is used to describe a filament of individuals where their attachments are by mucilagenous excretions or are attached by some means at their ends. Basically if the individuals in a filament don't share a cell wall then it is a pseudofilament.

Example:

Cell Motility Rhythms in Bacillaria paxillifer (M. R. M. Kapinga) [1992]

During that time, cells are arranged almost end to end forming a pseudofilament.

Pseudonodule {F}

In combination. Latin. pseudo - a counterfeit, a sham. Latin. nodus - a knot.

Differentiated area/structure on the valve whose form is variable. Essentially an area that may resemble an ocellus or pseudo-ocellus, but is structurally different from them. However, Pseudo-nodule and Pseudo-ocellus have been used synonymously.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.

(Eupodiscus subtilis)

In the centre is a rather large circular spot, and the usual pseudo-nodule of the genus...

Pseudopelagic {P}

Greek. pseudes - false.

Synonym of pseudo-oceanic.

Example:

Pseudoplankton {P}

Greek. pseudes - false.

Organisms not normally planktonic occurring accidentally in the pelagic realm (cf tychopelagic).

Example:

Dynamics of living phytoplankton: Implications for paleoenvironmental reconstructions (A. B. Barbosa) [2009]

In the case of living diatoms, high proportions of pseudoplanktonic species (benthic pennate species observed in the water column) can trace resuspension...

Pseudopores {F}

In combination. Latin. pseudo - a counterfeit, a sham. Latin. porus - a passage.
Probably dot within a dot, looking like a pore without actually perforating the valve.
Example:
On Some of the Rarer or Undescribed Species of Diatomaceae by Thomas Brightwell.
(Stictodiscus Hardmanianus)
...followed by a single row of pseudo-pores;...

Pseudoraphe {F}

In combination. Latin. pseudo - a counterfeit, a sham. Greek. rhaps - a seam.
A line of thickened silica, apex to apex, which is not a raphe but acts as a dividing line between the opposing transverse striae.
Example:
A Treatise on the Diatomaceae by Henri Van Heurck.
(Raphoneis Liburnica)
Valve broadly elliptic, with narroe pseudo-raphes;...

Pseudosepta (pl.), Pseudoseptum (sing.) {F}

In combination. Latin. pseudo - a counterfeit, a sham. Latin. septum - an inclosure, a hedge, fence, barrier or wall.
A thin siliceous projection issuing from the inside of the valve into the cell space in the interior, positioned at the apices.
Example:
The Morphology of the Diatom Frustule by H.G. Barber & E.Y. Haworth (Stauroneis)
Pseudosepta sometimes apparent as apical thickenings of silica.

Pseudostauros {F}

In combination. Latin. pseudo - a counterfeit, a sham. Greek. stauros - cross
Example:
A Treatise on the Diatomaceae by Henri van Heurck.
(Navicula stauroptera)
...diminishing in length on nearing the central nodule around which they are completely absent, thus producing a pseudostauros;...

Pseudothallus {F}

In combination. Latin. pseudo - a counterfeit, a sham. Greek. thallos - a young shoot.
Example:
Freshwater Biology by Ward & Whipple.
(Key - Mastogloia)
Mostly imbedded in a gelatinous pseudothallus.

Pteropod ooze {P}

Greek. pteron - wing, Greek. podos - foot,
A deep sea deposit composed largely of pteropod shells. Pteropod - a group of gastropods that swim by means of wing-like extensions to the foot.
Example:
Marine Geology of Northwestern Pacific: Description of Japanese Bathymetric Chart 6901 (R. S. Dietz) [1954]
...globigerina ooze, radiolarian ooze, diatom ooze, and

pteropod ooze. All these sediment types are present in the northwestern Pacific.

Puckered {F}

Origin unknown.

Corrugated or wrinkled.

Example:

Report on the Irish Diatomaceae by E. O'Meara.

(*Cyclotella dallasiana*)

...more accurately described it as "puckered", or as if blistered.

Pulverulent {P}

Latin. pulvis - powder.

In the form of a fine powder or easily crumbled.

Example:

Practical Directions for Collecting, Preserving, etc.

by Mead Edwards, Johnston & Smith

13

Punctae (pl.), Puncta (pl. & sin.), Punctum (sing.), Punctate {F}

Latin punctum;punctus - a prick, small hole or puncture. a point or a dot made in a waxen tablet as the sign of a vote.

Spots or dots on the valve and girdle bands.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.

(*Cymbella cymbiformis*)

Raphe surrounded by a narrow hyaline zone, slightly inflated near the central nodule, and showing there is an isolated punctum, unilateral.

Punctate {F}

Latin punctum;punctus - a prick, small hole or puncture. a point or a dot made in a waxen tablet as the sign of a vote.

Bearing spots or dots on the valve and girdle bands or likened to Punctae.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.

(*Amphora turgida*)

...indistinctly punctate, or with costiform striae...

Punctiform {F}

Latin. punctum - to prick.

Having punctures or dots or pits.

Example:

H.M.S. Challenger - Report on the Diatomaceae

(*Glyphodesmis challengeriensis*)

The granules, which are punctiform, are disposed in a quadrate manner...

Punctulation {F}

Latin. punctum - to prick.

As Punctiform.

Example:

A Treatise on the British Freshwater Algae

by G.S. West & F.E. Fritsch.

(Stephanodiscus)

...centre of valves sometimes bullate, with punctulations more or less in line with the marginal ones.

Pustuliform {F}

Latin. pustula.

Pertaining to pimples, warts or spots.

Example:

New Species of Fossil or Pelagic Marine Diatoms

by J. Brun. Trans. J. W. Barker.

(Biddulphia pustulata)

...some large and wide pustuliform beads are there irregularly disposed...

Pycnocline {P}{O}

Greek. pyknos - dense,

Zone of rapid change of density per unit distance (usually vertically).

Example:

Changes in Depth and Time of Certain Chemical and Physical Conditions and of the Standing Crop of Asterionella Formosa Hass. In the North Basin of Windermere in 1947 (J. W. G. Lund) [1963]

While turbulence in the epilimnion was sufficient to keep diatom cells in suspension, this was not so in the pycnocline, where they could sink passively...

Pyrenoid {P}

Greek. pyren - fruit, stone.

Colourless structure associated with chloroplasts (usually of a protein nature).

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour. (Nutrition)

Pyrenoids - special reserve food bodies - occur sometimes...

Pyriform {F}

In combination. Latin. pirum - a pear. Latin. forma - form.

Pear-shaped.

Example:

Some Fossil Diatoms from Barbados by G. Dallas Hanna & A.L. Brigger

((Aulacodiscus petersi)

...these pyriform areas taper toward the center.

Pyxidium {F}

Latin. pyxis - a box.

A small box-like structure.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.

(Pyxidicula)

Valves very inflated into a pyxidium.

Pyxidiform {F}

Latin. pyxis - a box.

In the shape of a small casket or box.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(Pyxilla genus)

Frustules simple, cylindrical, pyxidiform;...

Q

Quadrate, Quadrangular {G}

Latin. quadratus - squared, square.

Square(ish)

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
(Schizonema Grevillei)

Girdle face quadrangular, with rounded apices...

Quadrature {P}

Latin. quadratus - to square.

The time at which the sun and moon are approximately at right angles with respect to the earth, associated with neap tides (cf syzygy).

Example:

Quadrilobal {F}

In combination. Latin. quadri - four. Greek. lobos - lobe.

Having four lobes or rounded divisions.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(Auliscus sculptus)

...and leaving in the centre a quadrilobal space.

Quasi-sutural {F}

Latin. quasi - appearing as. plus Latin. sutura - a seam.

Giving the appearance of being joints (sutures) but actually being lines on the surface.

Example:

H.M.S. Challenger - Report on the Diatomaceae
(Rhizosolenia arafurensis)

...the quasi-sutural lines being merely thinner and more transparent strands.

Quaternary {H}{O}

Latin. quaterni - four by four.

Consisting of the Pleistocene and Holocene of the geologic time scale, this period makes up the second portion of the Cenozoic Era and dates from 3 million years ago to the present.

Example:

Notes on Diatoms by F.B. Taylor.

Certain forms found in the Travertines of the Quaternary period...

Quatrefoil {F}{G}

In combination. Old French - quatre - four. Old French. foil - leaf.

A design divided by cusps into four lobes.

Example:

Synopsis of the British Diatomaceae by W. Smith.

(Eupodiscus sculptus)

...the central striae forming a quatrefoil...

Quincunx {F}

In combination. Latin. quinque - five. Latin. uncia - a twelfth part.

An arrangement of five things at the corners and centre of a square or a larger number of things but spaced in the same manner.

Example:

Marine Diatoms of the Philippine Islands by A. Mann

(Grammatophora probata)

...all the rest of the valve surface covered with strong quincunx markings;...

Quincuncial(ly) {F}

In combination. Latin. quinque - five. Latin. uncia - a twelfth part.

An arrangement of five things at the corners and centre of a square or a larger number of things but spaced in the same manner.

Example:

H.M.S. Challenger - Report on the Diatomaceae

(Cestodiscus gemmifer)

...the periphery is ornamented with a quincuncially disposed granulation...

R

R.F.W. {H}

An abbreviation used to describe the source of diatom material.

Recent Freshwater.

R.M. {H}

An abbreviation used to describe the source of diatom material.

Recent Marine. See also Marine.

R.Br. {H}

An abbreviation used to describe the source of diatom material.

Recent Brackish Water. See also Brackish.

Radial Compartment {F}

Late Latin. radialis. plus In combination. Latin. com-. Latin. partis - a part.

A term sometimes used to describe a sector in a centric valve e.g. Actinoptychus.

Example:

Miocene and Pliocene Diatoms by W. W. Wornardt

(Actinoptychus bismarckii)

Valves discoid, with six radial compartments, alternately raised and depressed.

Radial Lines {F}

Late Latin. radialis. plus Latin. linea.

Lines of silica or pores etc that radiate from the central nodule towards the rim.

Example:

Simbirsk Diatoms by Otto N. Witt

(*Lepidodiscus elegans*)

...the whole radial lines are divided into two horizontal systems.

Radial Spaces {F}

Late Latin. radialis. plus French espace.

The plain hyaline area between features (cells) that form rays.

Example:

Arachnoidiscus by N.E. Brown.

(*Arachnoidiscus Ehrenbergii*)

Concentric spaces from half as broad to as broad as the cells are long; radial spaces much narrower.

Radial Striae {F}

Late Latin. radialis. plus Latin. stria - a furrow, groove or channel.

Lines of pores that radiate from the centre towards the margins.

Example:

Simbirsk Diatoms by Otto N. Witt

(*Triceratium nobile*)

The strong dots of the markings form in the middle a ring of radial striae.

Radial Symmetry {P}

Example:

Freshwater Algae -their Microscopic World Explored

by H. Canter-Lund & J.W.G. Lund

Radiant {F}

Late Latin. radialis.

See Radial Striae. See Radiate.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.

(*Melosira Roeseana*)

Valves circular, with striae radiant, punctate,...

Radiate {F}

Late Latin. radialis.

See Radial Striae. See Radiant.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.

(*Navicula rectangulata*)

Striation highly radiate, there being three centres of radiation on each side...

Radii {F}

Latin. radius - a rod, spoke or ray.

Radiating lines. From the centre towards the margins.

Example:

Simbirsk Diatoms by Otto N. Witt

(*Lepidodiscus elegans*)

The space between the radii are interrupted at a third of their extent and slightly thickened...

Radiolarian ooze {P}

Late Latin. radiolus - radius.

Siliceous deepsea fine-grain sediment in which at least 30% of the sediment consists of tests of the protists known as radiolarians.

Example:

Deep-Sea Sediments of the Indian Ocean (W. Schott) [1938]

In the equatorial and temperate latitudes *Globigerina* ooze, red clay, and radiolarian ooze are found, as well as hemipelagic deposits with coastal affinities such as the blue mud, coral mud, and others. On the other hand, in subpolar and polar regions, diatom ooze and glacial-marine sediments occur.

Rafting {P}

Old Norse. raptr - raft.

Passive transport of organisms by solid nonliving objects, ranging from rafts of floating, downed vegetation at the sea surface to transport of entire floras and faunas via continental drift. Also transport by Ice-raft.

Example:

Raised {F}

Middle English. reisen.

A word used to describe a feature that is proud of or higher than the surrounding area or a feature adjacent to it. An example would be the depressed/raised nature of the sectors in *Actinocyclus* sp. See also Depressed.

Example:

Diatoms of British Coastal Plankton by J. B. Sykes.

Valve surface divided into sectors that are alternately raised and depressed.

Ramified {P}

Latin. ramus - a branch.

Divided into branches. Used to describe a colony structure.

Example:

New Species of Fossil or Pelagic Marine Diatoms

by J. Brun. Trans. J. W. Barker.

(*Actinocyclus moroniensis*)

...so as to leave a longitudinal area variously ramified.

Ramous, Ramus, Ramuli {F}

Latin. ramus - a branch.

Branched.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.

(*Syndendrium* genus)

Valves dissimilar, one smooth, the other furnished with numerous elongated spines, often ramous.

Ramul(o)us (sing.), Ramuli(pl.) {F}

Latin. ramus - a little branch.

A little branch.

Example:

(1) Report on the Irish Diatomaceae by E. O'Meara.
(Schizonema mucosum)

Margin irregularly ramulous...

(2) Report on the Irish Diatomaceae by E. O'Meara.
(Schizonema ramosissimum)

Ramuli short, obtuse...

Random assemblage {P}

The concept that a community (qv) of organisms is found together on a random basis (cf superorganism concept).

Example:

Rank-abundance {P}

Relative abundance of organisms within a community ordered by rank, with the most abundant species assigned rank=1, the next most rank=2, and so forth. A common measure of community similarity in open ocean studies involves comparisons of rank-abundance.

Example:

Benthic Diatom Community Structure in Boreal Streams (J. Soininen) [2004]

The stability between sampling months in the rank abundance of diatom taxa was lowest among epiphytic communities.

Raphe {F}

Greek. rhaps - a seam.

A slit in the valve which has now been associated with movement.

Example:

New and Rare Diatoms from Oregon and Washington
by H. E. Sovereign.

(Pinnularia subpalousiana)

Raphe straight, threadlike, central pores bent to one side...

Raphe Branch {F}

Greek. rhaps - a seam. plus French. branche.

Continuous slit from proximal end to distal end.

Example:

Eunotia spp. (Bacillariophyceae) from Middle Eocene lake sediments and comments on the origin of the diatom raphe (P. A. Siver) [2011]

Internally, each raphe branch terminates subapically along the mantle...

Raphe Ribs {F}

Greek. rhaps - a seam. plus Old English. rib.

Thickened silica either side of the raphe.

Example:

The "Paradox" Diatom Bacillaria paxillifer

(Bacillariophyta) Revisited (A. M. M. Schmid) [2007]
Raphe ribs were held in position by siliceous clamps
(fibulae)...

Raphe Terminal {F}

Greek. rhaphe - a seam, plus Latin. terminus - end

A point at which the raphe stops.

Example:

Morphology and taxonomy of *Amphicocconeis* gen. nov. (M. de Stefano) [2003]

However, the genus *Psammococconeis* lacks the raphe terminal fissures, ...

Raphid {F}

Greek. rhaphe - a seam.

Bearing a raphe.

Example:

Mating system, sexual reproduction, and auxosporulation in the anomalous raphid diatom *eunotia* (D. G. Mann) [2003]

The diatom genus *Eunotia* is unusual among raphid diatoms in having a raphe system consisting of two short slits that are not integrated...

Rapeless {F}

Having no true raphe. May have a pseudo-raphe.

See also Araphid.

Example:

Diatoms in Eastern Australia by Neils Foged.

(*Achnanthes macquariensis* nov. spec.)

The rapheless valve with straight pseudoraphe...

Rare {P}

Latin. rarus.

(1) Very seldom occurring; typical sampling distribution fits a Poisson.

(2) Refers to a species known to exist in a community but that is often absent from a series of samples from that community.

Example:

The Potential Indicator Value of Rare Taxa Richness in Diatom Based Stream Bioassessment (N. D. Gillett) [2011]

This study aimed to characterize the environmental factors affecting the number of rare diatom taxa in western U.S. streams and rivers...

Ray {F}

Latin. radius - a rod. Also Old French. rais.

Hyaline line or row of punctae, areolae etc. radiating from the central area to the Margin or to a Terrace. Usually only referred to in Centric forms.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.

(*Coscinodiscus nitidus*)

The rays are distinctly marked towards the margin...

Reach {Hy}

The distance between two specific points outlining that portion of the stream, or river for which the forecast applies. This generally applies to the distance above and below the forecast point for which the forecast is valid.

Example:

Try to select the stones from different locations within the reach...

Rectangular {G}

In combination. Latin. recti - perpendicularly, upright. Latin. angulus - an angle.

A frustule with opposite sides parallel and adjoining sides at 90 degrees.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
(*Auricula decipiens*)

Frustule rectangular, somewhat constricted at the median portion...

Rectilinear {P}

In combination. Latin. rectifer - to make. Latin. linea - a line.

In a straight line. Used by diatomists to describe the movement of diatoms such as *Navicula* which traverse their path in line with their raphe.

Example:

New Species of Fossil or Pelagic Marine Diatoms
by J. Brun. Trans. J. W. Barker.

(*Achnanthes hexagona*)

Transverse striae...those in the centre rectilinear...

Recumbent {F}

Latin. recumbere - lie down..

Reclining or lying flat.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
(*Muelleriella limbata* v. *delicatula*)

...with a row of long, slender, recumbent spines.

Recurved {F}

Latin. recurvare.

Bent back.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.
(*Amphora monilifera*)

The recurved ends of the valves do not meet...

Red clay {P}

A pelagic (oceanic) sediment containing less than 30% material of biogenic origin (cf ooze); extremely fine clay mineral particles, accumulating very slowly, typically underlying the most oligotrophic areas of the subtropical anticyclones, covering about 38% of the deep ocean floor.

Example:

Physical Properties of Sediments in the Pacific Ocean (S.
V. Bruevich) [1968]

The vertical water distribution in typical red clay and in diatom ooze is characterized by very high homogeneity

Red Ooze {P}

Example:

Red tide {P}{O}{E}

A marked bloom of aquatic plants, protists or procaryotes; typified by dinoflagellate blooms discoloring the water a reddish brown coloration, often with concomitant production of toxins and bioluminescence phenomena. (cf milky seas)

Example:

Present Status of Red Tide Detection in Japan by Ocean Color Satellite (J. Ishizaka)

The diatom red tide on 2000-2001 seems to be one of the fall blooms;...

Reflexed {F}

Latin. Reflexum – to bend

Bent abruptly downward or backward.

Example:

Diatoms in Eastern Australia by Neils Foged.

(*Eunotia ballinaensia*)

The dorsal margin is almost parallel with the ventral margin and deciduous close to the rounded faintly reflexed apices.

Rejuvenescence {F}

In combination. Latin. prefix re - again. Latin. juvenis - young.

In this context to make a change in cell contents in which the cell becomes more active.

Example:

A Treatise on the British Freshwater Algae

by G.S. West & F.E. Fritsch.

(Naviculoideae)

Auxospores are formed either in pairs by conjugation of two individuals following a fission of each protoplast, or singly by rejuvenescence of the contents of a single cell.

Relative abundance {Hy}

The number of organisms of a particular kind present in a sample relative to the total number of organisms in the sample.

Example:

Benthic diatom flora in supraglacial habitats: a generic-level comparison (M. L. YALLOP) [2010]

...growth of some diatom species relative to others and any analyses based on the relative abundance of the diatoms could be misleading.

Reniform {G}

In combination. Latin. renes - the kidneys. Latin. forma - form.

Kidney shaped when in valve view

Example:

A Treatise on the Diatomaceae by Henri van Heurck.

(*Surirella* genus)

Valves cuneate, reniform, elliptic or linear, sometimes

twisted...

Reservoir {Hy}{H}

A man-made facility for the storage, regulation and controlled release of water.

Example:

Diatom succession in an urban reservoir system (C. M. Donar) [1996]

Prior to the establishment of the reservoir, the diatom flora was dominated by...

Respiration {O}

Metabolic process by which food or food-storage molecules yield the energy on which all living cells depend

Example:

Photosynthesis and respiration of a diatom biofilm cultured in a new gradient growth chamber (Jørgen Jensen) [2002]

Respiratory activity in a layer of the biofilm was determined as the difference between gross photosynthesis and outflux of O₂ from that layer.

Rest spores {P}

Greek. sporo - a seed.

Synonymous with

Endocyst, Statospore, Endospore, Rohespore, Dauersporen, Endocyst, Resting spore.

Example:

Notes on Diatoms by F.B. Taylor
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Resting Spore {P}

Latin. restare - to remain. plus Greek. spora - a seed.

See Endocyst.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(Reproduction)

Resting spores or endocysts with very thick walls and often provided with spines...

Reticulat(e)(ed)(ions) {F}

Latin. reticulum - diminutive of rete - net.

A pattern of lozenge-shaped markings or squares or diamonds or a net-like pattern. Sometimes with ridges between the shapes.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(Actinoptychus splendens)

Sectors, about 20, only slightly rounded, often with fine reticulations.

Reticulum {F}

Latin. reticulum. - a little net.

A network of similar shapes (often lozenges).

Example:

New Species of Fossil or Pelagic Marine Diatoms
by J. Brun. Trans. J. W. Barker.
(Cladogramma conicum)

...but is covered by a prominent reticulum with irregular
meshes...

Reverse vertical migration {P}

Diel vertical migration (qv) in which the shallowest depths are occupied during hours of daylight, the deepest depths are occupied during hours of darkness, best exemplified by dinoflagellates.

Example:

Microscopic Plants and Animals of the Oceans (Julie W. Ambler)

However, reverse vertical migration was observed in Puget Sound;...

Revolvute {F}

Latin. revolvere - to roll.

Rolled backwards.

Example:

The Diatomaceae of Philadelphia and Vicinity
by C.S. Boyer.

(Eunotia gracilis)

...apices slightly capitate and revolvute;...

Rhaphe {F}

Greek. rhaphe - a seam.

See Raphe.

Example:

Marine Diatoms of the Philippine Islands by A. Mann.
(Navicula bigemmata)

...a distinct line running on each side of the rhaphe,
in general midway...

Rheo -

Greek. rheos - flow.

Evolution of new species (forms, varieties, taxa) concentrated in very rapid events, considered nearly instantaneous in terms of geologic time. Prefix meaning current, flowing.

Example:

Rheology {P}

Greek. rheos - flow.

That aspect of limnology devoted to the study of lotic (qv) systems.

Example:

Physical characterization and diel dynamics of different fractions of extracellular polysaccharides in an axenic culture of a benthic diatom (J. F. C. De Brouwer) [2002]
...presence of diatom biofilms reduces shear stress on the bed and affects the rheology of the sediment-water interface...

Rheotaxis {P}

Greek. rheos - flow.

Change in orientation or direction of movement associated with the stimulus of a current, usually a current of water. Normally a function of a predatory species in an effort to locate prey.

Example:

Copepod Patches and Right Whales in the Great South Channel off New England (Karen Wishner et al) [1988]
Krill in patches show a strong rheotactic response to the wake...

Rhithron {H}

Pertaining to the organisms that inhabit a fluvial (qv) habitat.

Example:

Investigation of Diatom Populations in Rhithron and Potamon Communities in Oak Creek, Arizona (R. Johnson) [1975]

A total of 41 diatom species were recorded with quantitative and qualitative changes in diatom populations measured between rhithron and potamon zones.

Rhithrous (rhithron) {H}

Pertaining to the upper reaches of a stream or river.

Example:

Rhoium {H}

A stream community.

Example:

Rhombic (Rhomboidal), Rhombical {G}

Latin. rhombus - a magicians circle (magic wheel)

Being rhombus shaped.

Example:

(1) Pritchard's Infusoria (*Podosphenia cuneata*)

..it is rhomboidal, club-shaped, and slightly pointed.

(2) A Treatise on the Diatomaceae by Henri Van Heurck.

(*Rhizosolenia*)

Frustules formed of scales, more or less rhombical, very numerous and giving a squamous appearance on the frustule.

Rhombohedron, Rhombohedric {F}

In combination. Greek. rhombos - magic wheel. Greek. hedra - seat.

Six lozenge shaped objects in the trigonal or hexagonal system.

Example:

New Species of Fossil or Pelagic Marine Diatoms

by J. Brun. Trans. J. W. Barker.

(*Pleurosigma hamuliferum*)

Valve view rhombohedric, with wide and rounded ends.

Rhyacium {H}

A torrent community.

Example:

Ribbon {P}

Old French. riban.

A long strip. Usually used when describing filaments of diatoms. However, may be used to describe a long series of features in a line.

Example:

The Morphology of the Diatom Frustule
by H.G. Barber & E.Y. Haworth (Meridion)
Frustules joined in circular, or part-circular,
ribbons.

Ribbon distribution {P}

In the sea a distribution in which the variance of two of the three possible Cartesian coordinates (latitude, longitude, depth) is much restricted compared to the third, eg the upper slope benthic and pseudoceanic (qv) groups of species, with relatively narrow bathymetric (and therefore usually narrow inshore to offshore) limits. Usual sense is bathymetric restriction.

Example:

Ribbon-shaped {P}{F}

Diatom colony type. Usually those diatoms that are attached along the entire valve face. Also termed band-shaped.

Example:

Seasonal variation and spatial distribution of phyto- and protozooplankton in the central Barents Sea (T. N. Rat'kova) [2002]
Pennate diatoms, forming ribbon shaped colonies, occurred mainly at the ice edge...

Ribs {F}

Old English. ribb.

Hyaline areas between the apical axis and the margin. Often used to describe the hyaline areas parallel to the apical axis or between other features. See also Raphe Ribbs.

Example:

On a Fossil Marine Diatomaceous Deposit from Atlantic City, N.J. by C. Henry Kain and E. A. Schultze (Actinodiscus Atlanticus)
Near the circumference each ray has a strong rib extending for a short distance along its centre.

Richness {E}

The number of diverse species occupying a particular area. A sample with 50 species is richer than a sample with 5.

Example:

Taxonomic richness in the diatom flora of Himalayan streams (Garhwal, India) (P. Nautiyal) [2004]
The importance of altitude can be gauged from the fact that the richness of the diatom flora declined from high elevations of the Mandakini basin (200) to mid (Alaknanda 182) and the low elevations (Ganga 167).

Ridge {F}

Old English. hrycg.

A raised plate of silex, protruding from the valve face.

Example:

Marine Diatoms of the Philippine Islands by A. Mann
(Actinodiscus Schleinitzii)

...seeing that it has a decided ridge traversing each elevated sector of the circle...

Riffle {Hy}{E}

A shallow part of the stream where water flows swiftly over completely or partially submerged obstructions to produce surface agitation.

Example:

The influence of groundwater on diatom quantity within riffles of the Maple River (C. M. Waldorf) [1995]

This was tested by taking five sand samples from three different riffles in the east branch of the Maple River, then conducting Palmer cell counts of the living diatoms.

Rim {F}

Old English. rima.

A hyaline area at the margin, as seen in valve view, that runs the circumference of the valve.

Example:

Simbirsk Diatoms by Otto N. Witt
(Aulacodiscus lahuseni)

The flat circular shield bears near the rim a ring-shaped elevation.

Rimoportula {F}

In combination. Latin. rimosus - full of cracks, chinks or fissures. Latin. portula - a small gate or port.

Fibril-secreting organelles often position around the valve mantle. They differ from rimoportulae because they have satellite pores while the rimoportulae do not.

Fultoportulae and rimoportulae usually require an SEM to be observed.

Example:

Diatoms from the South China Seas by Dickman, Hodgkiss, Cheng & Gao.
(Glossary Entry)

Rip current {O}

A strong water-surface current of short duration flowing seaward from the shore; the return movement of water piled up on the shore by incoming waves and wind. It usually appears as a visible band of agitated water; and, with the outward movement concentrated in a limited band, its velocity is somewhat accentuated. A rip current is often miscalled a "rip tide." To swimmers, the phenomenon is known as "undertow."

Example:

Rip current characteristics and their role in the exchange of water and surf diatoms between the surf zone and nearshore (M. M. B. Talbot) [1987]

In considering rips as exchange mechanisms, two rip types are recognized.

Rip tide {O}

Also called rip current.

Example:

Riparian {Hy}{H}{E}

Latin. riparius - a river bank.

Areas adjacent to rivers and streams with a high density, diversity, and productivity of plant and animal species relative to nearby uplands. Also Riverain.

Example:

Using diatoms for determining the hydrological connectivity between upland, riparian and aquatic zones (Nuria Martinez-Carreras et al) [2011]

Specifically, diatoms were used to confirm or reject the hypothesis of existing surface runoff during rainfall-runoff events and to document the intermittent character of hydrological connectivity between, upland, riparian and aquatic zones.

Riparian zone {Hy}

Pertaining to or located on the bank of a body of water, especially a stream. A stream and all the vegetation on its banks.

Example: The Capacity of Diatom Species to Survive Ingestion by the Albigivorous Minnow, *Pimephales notatus* (P. G. Grubach) [2010]

Adjacent to the stream was a well-developed riparian zone composed primarily of...

River System {Hy}

All of the streams and channels draining a river basin.

Example:

Diatom flora of an Australian river system: spatial patterns and environmental relationships (B. C. Chessman) [1986]

Diatoms were collected from fifty-three sites scattered through the river system, under near base-flow conditions in late summer.

Riverine {H}

Old French - rivere.

Of, on or dwelling in or near a river; possibly formed by the action of a river.

Example:

Interaction of toxic trace metals and mechanisms of detoxification in the planktonic diatoms *Ditylum brightwellii* and *Thalassiosira pseudonana* (J. W. Rijstenbil) [1994]

Effects of cadmium (10 nM), copper (80 nM) and zinc (150 nM) additions were studied in the marine diatom *Ditylum brightwellii* and the riverine diatom *Thalassiosira pseudonana*.

Riverine wetlands {Hy}

Wetlands within river and stream channels; ocean-derived salinity is less than 0.5 part per thousand.

Example:

The palaeolimnological record from lake Cullulleraine, lower Murray River (south-east Australia) (J. Fluin) [2010]

The study highlights the need to validate findings of diatom records from individual riverine wetlands through development of multiproxy palaeoecological data.

Roaring forties {O}

A popular nautical term for the stormy ocean regions between 40 degrees and 50 degrees latitude. It nearly always refers to the southern hemisphere, where there is an almost completely uninterrupted belt of ocean with strong prevailing westerly winds.

Example:

Located in a tectonically active region in the roaring forties, New Zealand is

Robust {F}

Latin. robur - strength, oak.

Highly silicified.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
(*Navicula formosa*)

Raphe surrounded by a broad hyaline zone, elliptic lanceolate; terminal nodules robust, central nodule lateral.

Rod (-shaped) {F}

Old English. rodd.

A long thin shape of parallel sides and circular cross-section.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(*Rhizosolenia* genus)

Large maxima in the summer of the rod-shaped form.

Rosette {F}

French. diminutive of rose.

A group of features arranged like the leaves of a rose. Concentric leaves.

Example:

Marine Diatoms of the Philippine Islands by A. Mann
(*Trinacria limpida*)

...have undulating sides, delicate lines radiating from a central rosette, on which are strung widely separated beads...

Rostrate {G}

Latin. rostratus - having a beak or crooked point, beaked, curved.

Beaked or narrowly protracted.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(*Navicula subcapitata*)

...somewhat attenuated at the median portion, with apices rostrate, gently sub-capitate...

Rostrum (sing.), Rostra (pl.) {F}

Latin. rostrum - a beak.

A beak.

Example:

Pritchard's Infusoria (Navicula fulva)

...near the ends, the shell is slightly produced in the form of a rostrum.

Rottenstone

Amorphous, siliceous limestone which is similar in nature to pumice stone, but softer in texture, used as an abrasive. Also known as TRIPOLI.

Example:

On Some of the Results of the Expedition of the "Challenger" (T. H. Huxley) [1875]

Ehrenberg, in fact, had shown that the extensive beds of "rotten-stone" or "Tripoli"

Rotundate {F}

Latin. rotundus - a wheel.

Round, rounded, nearly spherical. A wheel.

Example:

H.M.S. Challenger - Report on the Diatomaceae (Navicula jejuna)

...the extremities, which are somewhat prolonged, are cuneately rotundate, while the ribs...

Rudimentary {F}

Latin. rudimentum - rud, raw.

Simple, incomplete or not well developed.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour. (Chaetoceros crinitus)

Bristles long and thin, springing from a little way within the valve margin, basal part very short and rudimentary.

Rugose {F}

Latin. rugosus - a wrinkle.

Covered with sunken lines.

Example:

Marine Diatoms of the Philippine Islands by A. Mann (Auliscus Philippinarium)

...two processes (ocelli) of moderate size, strongly ringed, tilted obliquely outward, set close to the margin on two wedge-shaped elevations, which are coarsely rugose with irregular-shaped beads;...

Ruhsore {P}

See Endocyst.

Example:

Notes on Diatoms by F. B. Taylor.

In certain genera, after a period of active vegetative life the frustule develops within it an internal secondary phase called a rest-spore (endocyst, endospore, ruhespore, statospore)

Runoff {Hy}{E}

That part of precipitation or snowmelt that appears in streams or surface-water bodies. Also the inflow of surface or subsurface water from agricultural land.

Example:

The Effects of Pineapple Farm Runoff on Diatoms in Freshwater Streams of Moorea, French Polynesia (E. A. Wong) [2007]

Agricultural runoff has been well known to affect stream ecosystems, in particular, photosynthetic organisms such as diatoms.

S

Saccate {P}

Latin. saccus - a bag.

A word that may be used to describe the structure of a colony. Meaning - pouched, pouch-like or gibbous.

Example:

Report on the Diatomaceae collected by H.M.S. Challenger. Botany Volume IV (Conte Abate Francesco Castracane Degli Antelminelli) [1886]

...being either ramified, ulvaceous, tubular, saccate, or mucilaginous and amorphous,...

Saddle-Shaped {F}

Old English. sadol.

Arched, concave and convex in sections, at right angles to each other.

Example:

Synopsis of the British Diatomaceae by W. Smith. (Campylodiscus genus)

Frustules free; saddle-shaped; valves equidistant...

Sagittal Axis {F}

Latin. sagitta - an arrow. plus Latin. axis.

A sagittal suture is a way line joining two elements (as in the bones of the skull). The axis is the straight line drawn along, and sometimes through, this wavy line.

The axis defined by the median line (which may not be straight).

See also. Apical Axis, Long Axis.

Example:

Key to the Genera of Diatoms of the Inland Waterways of Temperate North America by W. C. Vinyard.

(Ceratoneis)

...with a conspicuous pseudoraphe along the sagittal axis.

Sagittal Plane {F}

See Also Apical Plane

Example:

Salient {F}

Latin. saliens - to leap.

Projecting outwards, prominent.

Example:

H.M.S. Challenger - Report on the Diatomaceae (*Synedra fimbriata*)

The surface of the valve is ornamented with continuous transverse striae, which become salient near the margins...

Saline water {Hy}

Water that is considered unsuitable for human consumption or for irrigation because of its high content of dissolved solids; generally expressed as milligrams per liter (mg/L) of dissolved solids; seawater is generally considered to contain more than 35,000 mg/L of dissolved solids. A general salinity scale is:

Concentration of dissolved solids in milligrams per litre.

Slightly Saline 1,000 - 3,000

Moderately Saline 3,000 - 10,000

Very Saline 10,000 - 35,000

Brine More than 35,000

Example:

Salinity {H}{P}{O}{E}

Latin. salinus.

The degree of saltiness (in our case of water)

A measure of the total concentration of dissolved salts in sea water. More precisely the total amount of dissolved solids in parts per thousand (ppt) by weight when all the bromide and iodide has been converted to chloride, all the carbonate to oxide, and all organic matter completely oxidized (cf chlorinity). SI units for salinity: kg/m³.

Example:

Notes on Diatoms by F.B. Taylor

103 - ...adopted as a defence against changes of salinity in the water.

Salsuginous {H}

Latin. salsugo - saltmess.

Pertaining to or living in coastal habitats episodically inundated by salt or brackish water.

Example:

Salt lake {H}

An inland water body having a high salinity due to loss through evaporation, not drainage.

Example:

The diatom flora of Lake Eyre South: a large episodically filled lake in South Australia (D. W. Blinn) [1991]

Thirty-three diatom taxa were collected from the large

terminal salt lake, Lake Eyre South, located in south-central Australia.

Salt marsh {H}

A flat poorly drained coastal swamp typically inundated by high tides.

Example:

Modern saltmarsh diatom distributions of the Outer Banks, North Carolina, and the development of a transfer function for high resolution reconstructions of sea level (B. P. Horton) [2006]

Given that the distribution of saltmarsh diatoms is strongly influenced by surface elevation, we can use diatoms as 'proxies' for elevation,...

Saltwater intrusion {Hy}

The movement of salt water into fresh water aquifers.

Example:

Distribution of diatom assemblages and their relationship to environmental variables in the surface sediments of three northern Egyptian lakes (A. Zalat) [2005]

Eight ecological groups containing distinctive diatom assemblages reflect current environmental conditions; especially saltwater intrusion in the north and nutrient-rich freshwater in the south.

Sapropel {H}

Greek. sapos - rotten.

Term applied to organisms inhabiting muds rich in decaying organic matter (sapropelic).

Example:

Changes in primary productivity during Pliocene sapropel formation (J. S. S. Damsté) (2003)

The diatom biomarker, loliolide/isololiolide, became distinctly more abundant in the sapropels indicating that the eastern Mediterranean basin was enriched...

Sapropelic {P}

In combination. Greek. sapos - rotten.

Formed of slimy sediment laid down in water, largely organic in source.

Example:

(1) Notes on Diatoms by F.B. Taylor

128 - ...that most of these marls (argiles) are sapropelic and antiseptic...

(2) Upper Quaternary Laminated Sapropelic Sediments from the Continental Slope of Baja California (I. O. Murdmaa) [2010]

...represented by homogeneous calcareous clay with interbeds of slightly siliceous sapropelic mud:...

Saprophilic {H}{P}

Of or living in both polluted and clean waters, where the primary status is polluted.

Example:

Diatom Communities in the Cuyahoga River (USA) (B. J. Brown) [1995]
Nitzschia amphibia, a well known saprophilic diatom associated with organically polluted water...

Saprophobic {H}{P}

Only of or in clean waters.

Example:

Saprophyt(e)(ic) {P}

In combination. Greek. sapos - rotten. Greek. phyton - a plant.

Feeding on decaying organic matter.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(General Morphology)

It is only in exceptional cases that chromatophores are absent; the diatom is then saprophytic - that is to say, living on decayed organic matter.

Saproplankton {P}

Greek. sapos - rotten.

Saprophagous plankton, feeding on nonliving particulate materials in the water column (eg Noctiluca).

Example: A Preliminary Account of the Aquatic and Sub-Aquatic Vegetation and Sub-Aquatic Vegetation and Flora of the Witwatersrand (D. Weintroub) [1933]

Saproplankton occurs in stagnant pools and also in swamps.

Saproxenous {H}{P}

Of or living in both polluted and clean waters, where the primary status is clean waters.

Example:

The effects of effluent from a closed mine and treated sewage on epilithic diatom communities in a Korean stream (Y. S. Kim) [2008]

...was a higher number of saproxenous taxa and a variety of dominant species, including *Achnanthes lanceolata*, *Cocconeis placentula* var. *lineata*,...

Scabrous {F}

Latin. scabrosus - rough.

Rough, with projecting features, usually points.

Example:

The Morphology of the Diatom Frustule by H.G. Barber & E.Y. Haworth Striae scabrous (areas where puncta are absent).

Scalariform {F}

Latin. scala - a ladder.

Like a ladder. A term used to describe a structure on a valve. However, the term is also used to describe conjugation in filamentous algae.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(*Climacosira* genus)

...septa showing numerous openings more or less irregularly scalariform.

Scale (-like) {F}

Middle English - scale.

This term is used to describe the patterning formed by the spiral intercalary bands found on genera such as *Rhizosolenia*.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(*Rhizosolenia alata*)

Scales rhombic, finely striated.

Scallops, Scalloped {F}

Dutch. schelp - shell.

Bearing a border or edge reminiscent of the curves and peaks seen on the rim of a scallop shell.

Example:

Marine Diatoms of the Philippine Islands by A. Mann
(*Biddulphia undulosa*)

Valve broadly oval, convex, its margin undulating, or more correctly, scalloped, the indentations being broadly curved, but the external points of union between the scallops being acute angles;...

Scattered {F}

Origin unknown.

Dispersed over the surface. strewn about. Widely separated.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
(*Melosira granulata*)

Valve disc with large granules, scattered, distant...

Schizostauros {F}

In combination. Greek. schizein - to cleave. Greek. stauros - cross.

Like a *Stauros* that has been split in two.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(*Navicula nana*)

...striae reaching almost to the raphe, very radiant; the median ones simulating a schizostauros in consequence of their distance from one another,...

Scrobiculate {F}

Surface pitted or furrowed – with many small depressions.

Example:

Occurrence of Marine Plankton Diatoms in a Ten-Year Series of (W. E. Allen) [1936]

..irregularly and finely scrobiculate to reticulate, yellow to brown at maturity...

Sculpture, Sculpturing {F}

Latin. sculptum - to carve.

Three dimensional patterning on the surface of a valve.

Example:

Diatoms from the West Indian Archipelago
by P.T. Cleve.

(*Actinocyclus tenuissimus*)

Sculpture very delicate, small cellulae arranged in lines, radiating from the centre.

Sea level {Hy}

Long-term average position of the sea surface. Sea level varies from place to place and with the time period for which the average is calculated. For the conterminous United States, sea level is most commonly referenced to the National Geodetic Vertical Datum of 1929.

Example: The Sea-Level Fingerprint of West Antarctic Collapse (J. X. Mitrovica) [2009]

Recent projections of sea-level rise after a future collapse of the West Antarctic Ice Sheet.

Secondary Ray {F}

Latin. secundus - following, second. plus Latin. radius.

The rays, of lesser prominence, between the primary rays in a centric form.

See also Primary Ray, Tertiary Ray, Ray.

Example:

Arachnoidiscus by N.E. Brown.

(Arachnoidiscus ornatus)

...secondary rays 1/6th-1/3rd as long as the primary;...

Secondary Side {F}

Latin. secundus - following, second. plus Old English. side.

See Views.

Example:

Notes on Diatoms by F.B. Taylor

201 - What the early English writers called the side view is the secondary side of Kutzing...

Secondary structure {F}

Latin. secundus - following, second. plus Latin. structum - to build.

Structure within another feature.

Example:

Notes on Diatoms by F.B. Taylor

85 - The minute markings known as Secondary structure, are most easily observed in *Coscinodiscus asteromphalus*...

Secondary succession {P}

Succession initiated by the disruption of a previously existing seral or climax community by a major perturbation, leading to marked change in community structure, usually initially expressed as greatly reduced diversity (cf primary succession).

Example:

Periphyton: ecology, exploitation and management (M. Ekram Azim) [2005]

from its substratum and a process of secondary succession begins...

Secondary Valve {F}

Latin. secundus - following, second. plus Latin. valva - a folding door.

The smaller, lower (and probably younger) valve. See also hypovalve.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.

(*Chaetoceros affinis*)

...the secondary valve is almost flat with a knob in the middle,...

Sector {F}

Latin. sectum - to cut.

A sector usually refers to a segment of a centric valve whose face is undulate. Thus when viewing from above (valve view) a number of distinct segments are noted.

Example:

Marine Diatoms of the Philippine Islands by A. Mann
(*Actinodiscus Schleinitzii*)

...it has a decided ridge traversing each elevated sector of the circle and ending at the margin in a sessile ocellus...

Sediment {Hy}

Particles, derived from rocks or biological materials, that have been transported by a fluid or other natural process, suspended or settled in water.

Example:

Spatial distribution of diatoms in surface sediments from the Indian sector of Southern Ocean (R. Mohan) [2006]

...are well preserved in the sediments.

Sedimentary {P}

Latin. sedere - to sit.

Usually rocks formed from the deposition of sand, silts, clays and other fine material that has been previously suspended in water or carried by water.

Example:

Temperature patterns over the past eight centuries in Northern Fennoscandia inferred from sedimentary diatoms (J. Wechstrom) [2006]

...a high-resolution record of temperature variability for the past 800 yr based on sedimentary diatoms from a treeline lake in Finnish Lapland...

Seep {Hy}

A small area where water percolates (see percolation) slowly to the land surface or leakage through small openings.

Seepage = fluid discharged through a seep.

Example:

Comparison of Recent Siliceous and Carbonate Mat Development on the Shore of Hyper-Alkaline Lake Van and Mt. Nemrut Souk Lake, NE Anatolia, Turkey (M. Budakoglu) [2009]

Yellowish areas in Figure 1d indicate living diatom population points of the small seep water pools...

Segment {F}{G}

Latin. segmentum - to cut.

Geometrically - A portion of a circle. This may apply to three different general shapes, all of which may be understood with reference to an orange. Were you to cut an orange in half along its equator the triangular shapes produced by the orange pieces could be segments (though you will normally find these

shapes called sectors) Were you to peel an orange and view it from the side then each partition formed by the pieces of the orange would be considered a segment. Were you now to isolate one of those pieces by splitting the orange, then that could also be termed a segment.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.
(*Amphiprora complexa*)

The frustule is composed of two arcuate and constricted segments.....like the segments of an orange.

Segregation {F}

Latin. segregatum - apart.

Separating out.

Referring to the density of nodules on the valve. (see also Aggregation)

Example:

British Diatomaceae by Arthur Scott Donkin.

(*Naviculeae*)

...so as to form striae, which are either granular or costate, according to the aggregation or segregation of the nodules.

Seiche {Hy}{E}

A sudden oscillation of the water in a moderate-size body of water, caused by wind.

Example:

Some physical and generic aspects of fluctuations in non-marine plankton diatom populations (S. L. Van Landingham) [1964]

...seiches caused circulations which affected the distribution of aquatic organisms, including diatoms and fishes.

Self Division {P}

Example:

A Contribution to the Life History of the Diatomaceae:
Part II (H. L. Smith) [1887]

By the very structure of the diatom frustule, the valves, and the connecting membranes formed inside the old frustule by self-division, must be smaller than...

SEM {P}

Scanning Electron Microscopy Using a microscope in which a finely focused beam of electrons is scanned across a specimen, and the electron intensity variations are used to construct an image of the specimen. This type of microscope is ideal for magnifications from 200 to 35,000.

Example:

A simple method for SEM examination of sectioned diatom frustules (G. Massé) [2001]

SEM has allowed phycologists to appreciate the three-dimensional structure of diatom valves...

Semestrial {P}

Latin. sex - six, Latin. mensis - a month.

Pertaining to periods of six months; half-yearly.

Example:

Semi -

Latin. semi - half.

Prefix meaning half or partly.

Example:

Semidiurnal tide {P}{E}{O}

Latin. semi - half,

A tidal cycle exhibiting two high water and two low water periods each lunar day.

Example:

The recently established diatom *Coscinodiscus wailesii* (L. F. Fernandes) [2001]

...the annual average of semidiurnal tides is 2.2 m.

Semi-rhappe {F}

In combination. Latin. semi - half. Greek. rhappe - a seam.

Example:

Notes on Diatoms by F.B. Taylor

93 - ...and the two semi-rhappes are very short...

Semiannulus {F}

In combination. Latin. semi - half. Latin. anulus - a ring.

An annulus that appears on one valve only.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(*Cyclophora* genus)

Frustules with girdle face plicate, showing in girdle view
a semi-annulus on the visible part of one valve.

Semicircular {F}{G}

In combination. Latin. semi - half. Latin. circus - a ring.

Half a circle bounded by the diameter (a line drawn through the margins and passing through the centre) and half the circumference.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.
(*Campylodiscus centralis*)

...near which their centres are joined by semicircular
loops, forming a scalloped inner
margin...

Semilanceolate {G}

In combination. Latin. semi - half. Latin. lancea - a lance.

Half a lance head when viewed apex to apex

Example:

Taxonomic Studies on Some Freshwater Diatoms from the
Eastern Terai Region, Nepal (S. K. Rai) [2007]

Valves only slightly semilanceolate almost lanceolate,
dorsal and ventral sides convex;

Semilunate {F}{G}

In combination. Latin. semi - half. Latin. luna - the moon.

A crescent with an apical straight edge.

Example:

British Diatomaceae by Arthur Scott Donkin.

(*Navicula praetexta*)

...unstriated area broad, semilunate, and covered with irregularly scattered, conspicuous granules.

Sensu lato

Latin.

In the broad sense.

Example:

Observations of taxa of *Melosira sensu lato* among the slides from the Grunow Diatom Collection in Vienna

(Austria) Part I by Houk Václav

Sensu stricto

Latin.

In the strict sense.

Example:

Genus *Fragilaria* (sensu stricto) and related genera in araphid diatoms (M Idei, T Nagumo) [1995]

Separation Valve {F}

Specialised valve with elongated spines that facilitates separation of daughter valves and serves to limit colony size in some centric diatoms.

Example:

Vertical mixing, size change and resting stage formation of the planktonic diatom *Aulacoseira baicalensis* (D. H. Jewson) [2010]

...has divided and laid down a separation valve (i.e. without connecting spines)...

Septa(e) (pl.), Septum (sing.) {F}

Latin. septum - an inclosure, a hedge, fence, barrier, or wall.

A piece of silica that projects from a girdle band into the cell thereby dividing the cell into compartments. See also Diaphragm. See also Annuli.

Example:

H.M.S. Challenger - Report on the Diatomaceae

(*Grammatophora stricta*)

...the septa are not so straight, and at the polar extremities...

Septate {F}

Latin. septum - an inclosure, a hedge, fence, barrier, or wall.

Bearing septae.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.

(*Hemiaulidae*)

Valves simple or septate, often showing various abnormal inflations...

Septate Belt, Septate Plate {F}

Latin. septum - an inclosure, a hedge, fence, barrier, or wall. plus Old English. belt.

A belt of silica that projects from a girdle band into the cell thereby dividing the cell

into compartments. In this case the septa form a complete ring.

Example:

Synopsis of North American Diatomaceae. Part II (C. S. Boyer) [1927]

A septate plate divided into loculi is found...

Septiform {F}

Latin. septum - an inclosure, a hedge, fence, barrier, or wall.

Appearing as septae.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(Lepidodiscus genus)

Margins showing numerous narrow septiform depressions...

Serotinal {P}

Latin. serotinus - late.

Pertaining to late summer.

Example:

Illinois biological monographs (Volume 12).

Increasing in abundance, these forms make up a serotinal community...

Serrate(d) {F}

Latin. serra - a saw.

Notched like the teeth of a saw.

Example:

The Morphology of the Diatom Frustule
by H.G. Barber & E.Y. Haworth (Chaetoceros)
Setae robust and serrate.

Sessil {F}

Latin. sessilis - low.

In this context - meaning stalkless or squat. See also sessile.

Example:

Marine Diatoms of the Philippine Islands by A. Mann
(Biddulphia exacta)

Valve triangular, side slightly convex, apices not produced; processes nearly sessil, tilted outward;...

Sessile {H}{O}{E}

Latin. sessio - sitting.

Attached to the substrate (Usually by means of gelatinous secretions)

Sometimes used instead of Sessil to indicate squat.

Sedentary.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
(Synedra genus)

Frustule sessile on other plants.

Seston {P}

The total weight of all particulate materials in sea water, both living and non living, that can be collected on a filter of specified pore size (eg 0.45mm).

Example:

High reproduction of *Calanus finmarchicus* during a diatom-dominated spring bloom (M. Koski) [2007]

...when both seton diatom concentration and proportional ingestion of diatoms were extremely high.

Setae (pl.), Seta (sing.) {F}

Latin. seta - a thick, stiff hair; bristle.

A hollow cone or cylinder of silica projecting from the valve margin.

This term is often used to describe bristles and other long projections. In the past such terms as Horn, Awn, Bristle, Spine have been used)

Example:

The Morphology of the Diatom Frustule

by H.G. Barber & E.Y. Haworth (Chaetoceros)

Setae robust and serrate.

Setiform {F}

Latin. seta - a thick, stiff hair; bristle.

Bearing setae or being setae-like.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
(Hercotheca)

...furnished with rather short, setiform spines.

Shagreen(-like) {F}

Turkish. sagri - horses rump.

This description has been applied to the patterns produced on the valves of a number of species and is worthy of explanation. Shagreen was a popular covering for various articles in the Victorian era. It was particularly used for covering pocket cases to carry various valuables such as instruments. It is made from shark skin which is dyed (usually green) and then sanded down resulting in a quite distinctive granular pattern of nodules. The name was originally applied to leather produced from horses skin, hence its derivation.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.

(Campylodiscus eximius)

...which are not arranged in any order, but indiscriminately scattered, like the points in shagreen.

Shallows {Hy}

A term applied to a shallow place or area in a body of water; a shoal.

Example:

Diatoms of the Puck Bay coastal shallows (Poland, Southern Baltic) (A. Witkowski) [1991]

Diatoms typical of the coastal shallows environment are...

Sheath {F}

Old English. sceath.

A close fitting, often tubular, covering about another feature. Also Collar.

Example:

New Species of Fossil or Pelagic Marine Diatoms
by J. Brun. Trans. J. W. Barker.

(Aulacodiscus giganticus)

Processes with capitula nearly sessile, with a wide

cylindrical sheath very apparent.

Shelf break {P}

The outer edge of the continental shelf; the zone of interface between the continental shelf and the continental slope.

Example:

Diatom numbers around the continental shelf break (M. Funayama) [2001]

On the other hand, in the open sea around the continental shelf break, there were few diatoms in any season.

Shell {F}

Old English. scell.

In the case of diatoms this term is synonymous with valve and lorica.

Occasionally with the whole frustule.

Example:

Pritchard's Infusoria

(Navicula)

...the shell is slightly produced in the form of a rostrum.

The shell reference occurs in Pritchard over and over and appears to be synonymous with Lorica.

Shield {F}

Old English. sceld.

See Valve Face.

Example:

Simbirsk Diatoms by Otto N. Witt

(Lepidodiscus elegans)

Shield circular; the broad rim finely striated;...

Shield View {F}

Old English. sceld.

Valve facing the observer.

Example:

Simbirsk Diatoms by Otto N. Witt

(Pyrgodiscus armatus)

...one in shield and belt views.

Shoal {Hy}{E}

A relatively shallow place in a stream, lake, or sea.

Example:

Methodological aspects of paleo-ecological diatom research in coastal areas of the Netherlands (P. C. Vos) [1988]

In addition, ecological data from a diatom study of the sandy intertidal shoals in the Oosterschelde...

Sickle (-shaped) {G}{F}

Latin secula - to cut.

An instrument with a curved blade. Half a crescent.

Example:

Marine Diatoms of the Philippine Islands by A. Mann

(Stictodesmis australis)

But even the valves themselves show certain worthy differences, those of *S. australis* being much narrower and very often curved sideways, so as to take on a sickle shape.

Side View {F}

Old English. side. French. vue - see.

See Views.

Example:

Notes on Diatoms by F.B. Taylor

201 - ...and side view when the valve is next to the eye...

Sidereal day {P}(O)

Latin. siderus - constellation.

The mean time taken for one rotation of the Earth; each year comprises 365.256 sidereal days.

Example:

The Oceanography of the Celtic Sea II. Conditions in the Spring of 1950 (L. H. N. Cooper) [1961]

...this gives an average current of 4-5 miles per sidereal day...

Sieve {F}

Old English. sife.

(1) A group of pores or porelli situate in an ocellus.

(2) A device for separating diatoms using a fine mesh (mechanical).

(3) A means by which filter feeders acquire food

Example:

Valve morphogenesis in the diatom genus *Pleurosigma* (F. A. Sterrenburg) [2005]

(1) The sieve-membranes then close the internal areolar foramina...

Do diatom algae frustules accumulate uranium? (E. L. Goldberg) [1998]

(2) The second fraction was thoroughly washed by distilled water through a 40 p,m sieve.

(3) Most crustaceans and fish, either directly or indirectly, thrived on diatoms, which are at the base of the food chain. Many shellfish sieve diatoms ...

Sigmoid {G}

Greek. sigma - letter of the Greek alphabet.

Generally S-shaped. But more specifically have apices that curve in opposite directions. (also C-shaped)

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.

(*Pleurosigma angulatum*)

Valve broadly lanceolate, gently flexed, sigmoid, with median part slightly angular.

Silex {P}

Latin. silex:silicis - flint.

An alternative name for silica.

Example:

Notes on Diatoms by F.B. Taylor

87 - ...separated from one another by thin plates of silex.

Silica {F}{E}

Latin. silex:silicis - flint.

Example:

Notes on Diatoms by F.B. Taylor

94 - ...the elevated, ridge-like border of silica that surrounds the two halves...

Silica Deposition Vesicle (SDV) {P}

An organelle associated with the formation of the frustule.

Example:

Fine Structure of the Diatom *Amphipleura pellucida*. II (E. F. Stoermer) [1965]

This sac expands laterally to form the silica deposition vesicle...

Silicalemma {P}

In combination. Latin. silex:silicis - flint.Latin. lemma - matter

See example for explanation.

Example:

The Algae - A review by G. W. Prescott.

Within the silicon is a thin layer called the silicalemma, and this is considered to function directly in depositing silicon in the wall,...

Siliceous {P}

Latin. silex - flint.

Composed of silica

Example:

Diatoms of British Coastal Plankton by J. B. Sykes.

Cells small, weakly siliceous. Spines relatively long.

Silicification {P}{F}

Latin. silex, silicis - flint

The action of forming by the appropriation of silica.

Example:

Causes and biogeochemical implications of regional differences in silicification of marine diatoms (S. B. Baines) [2010]

Instead, cellular silicification varied substantially among diatom morphological types within each region, suggesting that community composition largely...

Silicified {F}

Latin. silex - flint.

See Hyaline.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(*Chaetoceros Willei*)

It is slenderer, frailer, more weakly silicified, aperture very narrow...

Sill depth {P}

Water depth of the deepest channel connecting an oceanic basin to another or to the global ocean beyond.

Example:

Preservation of Plankton Shells in an Anaerobic Basin off California (W. H. Berger) [1970]

The anaerobic part of the basin below the sill depth contains abundant...

Silurian {P}

Greek. silouros.

The geological age preceding the Devonian.

Example:

Notes on Diatoms by F.B. Taylor

Ehrenberg claimed that diatoms were to be found from the Silurian up to the Tertiary and...

Simple Raphe {F}

Latin. simplex. plus Greek. rhaphe - a seam.

A raphe that is a single slit from terminal to central nodule.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
(*Stauroneis spicula*)

...not dilated at the extremities; raphe simple;
surrounded by a narrow hyaline zone;...

Sinuuous, Sinuate {F}

Latin. sinus - a bend, fold, bay.

A term often applied to a snaking raphe. (Not to be confused with Sinus)

Example:

The Morphology of the Diatom Frustule

by H.G. Barber & E.Y. Haworth (*Mastogloia*)

Central raphe generally straight and threadlike,
occasionally a sinuuous oblique slit.

Sinus (sing.), Sinuses (pl.) {F}

Latin. sinus - a bend, fold or bay.

An indentation, a notch or a cavity. Sometimes elongated. (Not to be confused with sinuous)

Example:

Marine Diatoms of the Philippine Islands by A. Mann

(*Biddulphia inverta*)

...the whole surface of the valve, except the tips of the horns and the three hyaline sinuses, loosely covered with large crudely formed beads showing an imperfectly radial arrangement;...

Slack water {H}{P}

Old English. slaec.

An interval of low velocity tidal current, usually the period of reversal between ebb and flow.

Example:

(1) Algal mats and insect emergence in rivers under Mediterranean climates (M. Power) [2009]

...by Cocconeis and gomphonemoid diatoms, particularly in slack water along the river margin (foreground),...

(2) Continental/marine ratio changes in suspended and settled matter across a macrotidal estuary (J. P. Dupont) [1994]

...showing a tidal cycle with a long slack water stage of high tide...

Slick {H}

Middle English. sliken - to smooth.

An aggregation of floating matter resulting in reduced wave activity and a smooth and shiny water surface.

Example:

The Effect of Grazing on Marine Littoral Diatom Populations (R. W. Castenholz) [1961]

...a dark diatom slick developed rapidly on most of these areas and on most other littoral substrate after all organisms had been removed ...

Slime {P}

Old English. slim.

(1) A thick, sticky, slippery substance.

(2) A mucous substance secreted by certain organisms (eg various bacteria produce extracellular mucopolysaccharides).

Example:

The bacterial-type taxis and protein methylation in diatoms (E. K. Dibrova) [1985]

...locomotive organelles and gliding is accompanied by the directed movement of slime.

Slime-canals {F}

Old English. slim. plus Latin. canalis - a water pipe.

See Spinulae.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour. (Lauderia genus)

...and numerous very small spinulae (slime-canals) at the margin...

Slime-pore {F}

Old English. slim. plus Greek. poros - a passage.

See Spinulae.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour. (Coscinoscira polychorda)

Four to nine slime-pores near the centre of the circle.

Slipper-shaped {H}

Origin unknown.

Shaped like a house-slipper - as in Euglena.

Example:

The Algae - A review by G. W. Prescott.

Cells are fusiform, needle-shaped, lunate, sigmoid, or slipper- and wedge-shaped.

Slope Water {P}

Discrete water mass region off eastern North America, a transition zone (qv) bound by the 15° C isotherm contour at the 200 m surface and the edge of the continental shelf.

Example:

Phytoplankton species composition and abundance in a Gulf Stream warm core ring (J. Gould) [1988]

After interactions with and overwashes by the Gulf Stream and Slope Water in July, diatom numbers in the surface waters...

Slough {Hy}{E}

A small marshy tract lying in a swale or other local shallow, undrained depression; a sluggish creek or channel in a wetland.

Example:

Observations of Skin Sloughing in the Crested Sculpin (*Blepsias bolobus*) (J. Millstein) [1998]

...and the large number of diatoms and filamentous algae found in the slough.

Solar day {P}

The mean time interval between consecutive sunrises or any other given position of the sun (eg zenith); nominally 24 hrs (cf sidereal day).

Example:

Foraging Activity of Limpets in Normal and Abnormal Tidal Regime (C. Little) [1991]

...concluded that the occurrence of both a lunar-day and a solar-day rhythm in the diatom *Hantzschia virgata* led to apparent re-phasing of the activity rhythm...

Solenoid {F}{G}

Greek. solen - a pipe.

A cylindrical coil.

Example:

Evaluation of nitrogen fixation in the diatom genus *Rhizosolenia* (T. A. Villareal) [1987]

Large, solenoid *Rhizosolenia* species are characteristic of the widespread...

Solitary {P}

Latin. solus - alone.

This term is used for features on frustules where it means 'separate from'.

It is also used to describe a diatom frustule that is not in any sort of colony.

Example:

Key to the Genera of Diatoms of the Inland Waterways of Temperate North America by W. C. Vinyard.
(*Cyclotella*)

Solitary, filamentous or colonial...

Solution {Hy}

Formed when a solid, gas, or another liquid in contact with a liquid becomes dispersed homogeneously throughout the liquid. The substance, called a solute, is said to dissolve. The liquid is called the solvent.

Example:

Solubility of the Silica in Diatoms (E. G. Jørgensen) [1955]

Atkins (1945) tried to dissolve diatoms in alkaline solutions,...

Soudure {F}

Example:

Notes on Diatoms by F.B. Taylor

(Manner of Growth - 44)

...and the junction is maintained by the union (soudure) of the plasma coating the awns.

Soundings {P}

Origin uncertain.

Ascertaining the depth of the ocean. Many samples were taken from sounding lines.

Example:

Practical Directions for Collecting, Preserving, etc.

by Mead Edwards, Johnston & Smith

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Southern Ocean (Antarctic Ocean) {H}

Used to describe oceanic waters surrounding Antarctica, extending to about 40° S, the northern limit of drift ice, or to the southern Subtropical Convergence (qv).

Example:

Morphometric variability in the diatom *Fragilariopsis kerguelensis*: Implications for Southern Ocean paleoceanography (G. Cortese) [2007]

Today, diatoms dominate the Southern Ocean phytoplankton, with the only exception being represented by early spring blooms south of the Antarctic...

sp.

Latin.

Abbreviation of specie.

Example:

Sp. nov.

Nueva especie An abbreviation of the Latin species nova.

Example:

Spadix {F}

Greek. spadix - a torn-off palm branch.

In the form of a floral spike.

Example:

New Species of Fossil or Pelagic Marine Diatoms

by J. Brun. Trans. J. W. Barker.

(*Schizonema japonicum*)

Around the terminal nodules, which are fairly distant from the edge, spreads a spadix of three small striae...

Spat(h)ulate {G}

Latin. spatula - a broad flat wooden instrument for stirring liquids.

Like a spatula. Broad at one end tapering gradually into a stem.

Example:

The Morphology of the Diatom Frustule
by H.G. Barber & E.Y. Haworth (Asterionella)
...isobilateral, with spatulate or inflated ends.

Spatuliform {F}

Latin. spatula - a broad flat wooden instrument for stirring liquids.

In nature similar to a spatula. See spatulate.

Example:

New Species of Fossil or Pelagic Marine Diatoms
by J. Brun. Trans. J. W. Barker.
(Campylodiscus albifrons)
They are here abruptly terminated and spatuliform.

Species assemblage {P}

See assemblage.

Example:

Phosphorus dynamics in Danish lakes and the implications
for diatom ecology and palaeoecology (E. G. Bradshaw)
[2002]

The diatom species assemblage of surface sediments can be
used to infer in-lake nutrient concentrations.

Species diversity {Hy}

An ecological concept that incorporates both the number of species in a particular sampling area and the evenness with which individuals are distributed among the various species.

Example:

Diversity dynamics of marine planktonic diatoms across the
Cenozoic (D. L. Rabosky) [2009]

Peak species diversity in marine planktonic diatoms
occurred at the Eocene- Oligocene boundary...

Species (taxa) richness {Hy}

The number of species (taxa) present in a defined area or sampling unit.

Example:

Spherical, Spheroid {F}

Greek. sphaira.

In the form of a globe.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(Socialia genus)
Chains curved, embedded in mucilage forming irregularly
spherical colonies.

Spherule {F}

Greek. sphaira.

A small sphere.

Example:

Paper by Henry J. Slack (Eupodiscus argus)

Monthly Microscopical Journal.

It is entirely composed of spherules of different sizes...

Spicule {F}

Latin. spica - an ear of corn.

A small needle-like body.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.

(Chaetoceros genus)

The valves of the spores are often armed with spines or spicules, sometimes only on one valve,...

Spillway {Hy}

A structure over or through which excess or flood flows are discharged. If the flow is controlled by gates, it is a controlled spillway, if the elevation of the spillway crest is the only control, it is an uncontrolled spillway.

Example:

Paleolimnology of Lake Tanganyika, East Africa, over the past 100 k yr (C. A. Scholz) [2003]

The diatom assemblages observed suggest that over the past ~ 14 k yr lake levels were at least close to the modern spillway height.

Spindle {F}

Old English. spinel - to spin.

Long and thin, tapering gently to the apices.

Example:

Pritchard's Infusoria

(Bacillaria vulgaris)

...viewed sideways they resemble a spindle.

Spine, Spiny {F}

Latin. spina - a thorn.

A process that extends outward terminating in either a blunt or sharp tip.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.

(Hemiaulus genus)

...furnished with processes, often elongated, generally straight, placed on the outer margin in girdle view and tipped with a spine or mucro...

Spinulae, Spinules {F}

Latin. spina - a thorn.

A process that extends outward terminating in either a blunt or sharp tip, but not large enough to warrant being termed a spine. These have at times been called 'slime canals' and 'slime pores'.

Example:

Miocene and Pliocene Diatoms by W. W. Wornardt

(Actinoptychus senarius)

Margin finely striate, with a ring of fine spinulae.

Spinulose {F}

Latin. spina - a thorn.

Spine-like.

Example:

H.M.S. Challenger - Report on the Diatomaceae

(Chaetoceros criophilum)

The setae are very long, spinulose, spring from the middle of the valves...

Spiral {F}{P}{G}

Greek. speira - a coil.

To twist longitudinally, to turn about an axis.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.

(Campylodiscus eximius)

I have seen one specimen spiral like C. spiralis.

Splash Zone {P}

See Littoral Zone.

Example:

Composition, structure and stratification of laminated cyanobacterial mats in an irrigation canal (Al-Kharj, Saudi Arabia) (T. M. Khoja) [2000]

The abundance of jelly-like masses of diatoms were recorded upstream in the splash zone,...

Split sample {Hy}

A sample prepared by dividing it into two or more equal volumes, where each volume is considered a separate sample but representative of the entire sample.

Example:

The 1998 - 1999 Split Sample Study for Chesapeake Bay Program Phytoplankton, Microzooplankton and Mesozooplankton Monitoring Components [2000]

A split sampling study was done in the spring and summer of 1998 to compare results of the Maryland and Virginia plankton monitoring programs.

Spoke {F}

Old English. spaca.

Rays of thickened silica or row of puncta etc. from the central nodule to the margin. See also Ray.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
(Actinodiscus genus)

...elevated portions ending in an edge, giving the appearance of the spokes of a wheel...

Sporange {P}

Greek. sporo - a seed.

Example:

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Sporangia (pl.), Sporangium (sing.), Sporangium (sing.) {P}

In combination. Greek. spora - a seed. Greek. speirein - to sow.

A spore-case.

Example:

(1) H.M.S. Challenger - Report on the Diatomaceae
(Navicula sp. Page 35)

The probability that this is a sporangial frustule may be borne in mind.

(2) A Treatise on the Diatomaceae by Henri Van Heurck.
...from this mixture is borne a single sporangium, which gives rise to...

Spore {O}{P}

Minute, unicellular, asexual reproductive structure of an alga

Example:

Resting spore formation in the marine diatom *Thalassiosira nordenskioeldii* under iron- and nitrogen-limited conditions (K. Sugie) [2008]

In particular, nitrogen limitation is an important factor controlling diatom resting spore formation.

Sporulate {P}

Greek. sporo - a seed.

Example:

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Sporulation {P}

Greek. sporo - a seed.

The formation of spores.

Example:

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Spring {Hy}{P}

Place where a concentrated discharge of ground water flows at the ground surface or referring to a season.

Example:

(1) Diatom-mediated barite precipitation in microbial mats calcifying at Stinking Springs, a warm sulphur spring system in Northwestern Utah, USA (S. M. Bonny) [2007]

These mats are lithified by minerals precipitating from the spring water, and diatoms are trapped and preserved in situ in porous calcite deposits (tufas).

(2) The Biology of diatom (Dietrich Werner) [1977]

As a rule, the spring diatom bloom is much larger than the autumn bloom,...

Spring tide {P}{Hy}{E}

The exceptionally high and low tides that occur at the time of the new moon or the full

moon when the sun, moon, and earth are approximately aligned (in syzygy, qv), on average about 20% higher than normal (mean) tides.

Example:

Pelagic diatom assemblages are good indicators of mixed water intrusions into Saanich Inlet, a stratified fjord in Vancouver Island (L. A. Hobson) [2001]

During the spring tide, diatoms were evenly distributed throughout the Inlet.

Spur {F}

Old English. spura.

A hard, sharp projection. It may be straight or curved.

Example:

The Diatomaceae of Philadelphia and Vicinity
by C.S. Boyer.

(Biddulphia rhombus)

Minute spurs are scattered over the surface,...

Squamose, Squamous {F}

Latin. squama - a scale.

Scale like.

Example:

(1) New Species of Fossil or Pelagic Marine Diatoms by J. Brun. Trans. J. W. Barker. (Anaulus latecavatus)

Surface squamose, reticulate, punctate.

(2) A Treatise on the Diatomaceae by Henri Van Heurck.
(Rhizosolenia)

Frustules formed of scales, more or less rhombical, very numerous and giving a squamous appearance on the frustule.

Stage {Hy}

The height of the water surface above an established datum plane, such as in a river above a predetermined point that may (or may not) be near the channel floor.

Example:

Stagnicolous {H}

Latin. stagnare - pond.

Living in stagnant water.

Example:

Stalk {F}

Old English. staela.

A slender connection between a feature and its anchor point.

Example:

Pritchard's Infusoria
(Navicula amphora)

This species is easily confounded with Cocconema cistula, when the latter is without a stalk.

Star-Shaped {F}

Old English. steorra.

See Stellate.

Example:

Marine Plankton - A Practical Guide

by G.E. Newell & R.C. Newell

(Asterionella)

A. japonica forms star-shaped clusters which in turn unite into spirals.

Statoblast {P}

In combination. Greek. statos - set or place and

Example:

Notes on Diatoms by F.B. Taylor

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Statospore {P}

In combination. Greek. statos - set or placed. Greek. spora - a seed.

See Endocyst. Note:- a statocyst is a term used to describe a cell containing starch grains. Not to be confused.

Example:

Notes on Diatoms by F. B. Taylor.

In certain genera, after a period of active vegetative life the frustule develops within it an internal secondary phase called a rest-spore (endocyst, endospore, ruhespore, statospore)

Stauroid {F}

Greek. stauros - cross.

Broadly cruciform shaped.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(Oxyamphora)

Nodule often stauroid.

Stauroneiform {F}

Greek. stauros - cross.

A hyaline area in the shape of a stauros (bow-tie shaped) See also Stauros.

Example:

British Diatomaceae by Arthur Scott Donkin.

(*Navicula punctata*)

...striae...reaching to the median line, shortened opposite to the central nodule, so as to leave a stauroneiform, median, blank space.

Stauros {F}

Greek. stauros - cross.

A hyaline region which extends from the central nodule to the nearest margin e.g. broadly Cruciform shape.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.

(*Stauroneis Reinhardtii*)

Raphe surrounded by a narrow hyaline zone, dilated in form of stauros round the central nodule;...

Stellate {G}

Latin. stella - a star.

Star shaped.

Example:

The Morphology of the Diatom Frustule
by H.G. Barber & E.Y. Haworth (Tabellaria)
Frustules form zig-zag chains or stellate colonies...

Steno -

Greek. stenos - narrow.

Prefix meaning narrow.

Example:

Stenobathic {E}

Able to tolerate only small changes in water depth (see Eurybathic).

Example:

Stenohaline {H}

In combination. Greek. stenos - narrow. Greek. hals - salt.

Restricted to a narrow range of salinity.

Example:

Phytoplankton Composition of Stagnant and Tidal Ecosystems
in Relation to Salinity, Nutrients, Light and Turbulence
(J. W. Rijstenbil) [1987]

Detonula confervacea and the stenohaline Rhizosolenia
delicatula were limited to polyhaline waters.

Stenothermal, Stenothermic {H}{E}

Greek. stenos - narrow.

Organisms with a narrow range of tolerated temperatures (cf eurythermal).

Example:

Diatom species composition along a thermal gradient in the
Portneuf River, Idaho, USA (D. K. Vinson) [1989]

Analysis also showed that certain diatom taxa were
stenothermal, showing distinct preferences for various
temperatures...

Stenotopic {H}

Greek. stenos - narrow.

An organism with narrow habitat requirements or environmental tolerances (cf
eurytopic).

Example:

Diatoms in Pleistocene Deep Black Sea Sediments (Nancy G.
Maynard) [2004]

Because certain species of diatoms are stenotopic, the
organisms can be used as paleoecologic indicators.

Step {F}

Old English. steppe.

Where a straight margin is abruptly terminated at a near rightangle before continuing
in the same direction.

Example:

Diatoms of British Coastal Plankton by J. B. Sykes.
Valve flat but with a noticeable step in girdle view.

Sternum {F}

Greek. sternom - chest.

A thickened silica (hyaline) region that runs the length of an araphid diatom (no raphe) between the rows of striae.

Example:

Diatoms from the South China Seas
by Dickman, Hodgkiss, Cheng & Gao.
(Glossary Entry)

The first formed longitudinal rib formed in pennate diatoms. In raphid species the sternum extends around the raphe slits.

Stigma {F}

Greek. stigma(tos) - tattoo-mark, brand.

Each of the respiratory openings or breathing-pores; a spiracle

Example:

Diatoms from the Colombian and Peruvian Amazon (A. A. Vouilloud) [2010]

Internally the stigma is a transverse slit aligned with the median stria. Central area asymmetric.

Stigmata {F}

Greek. stigma(tos) - tattoo-mark, brand.

Perforation through valve face whose external opening is rounded and whose internal opening is slit-like.

Example:

The Morphology of the Diatom Frustule
by H.G. Barber & E.Y. Haworth (Cymbella)
...with one or more isolated stigmata present,...

Stigmoid {F}

Greek. stigma(tos) - tattoo-mark, brand.

Perforation through a valve face whose external opening is similar to the puncta of the valve and whose internal opening is slightly modified from the other puncta.

Example:

Diatoms from the Colombian and Peruvian Amazon: the Genera
(A. A. Vouilloud) [2010]

One dorsal stigmoid at the end of the central stria, with an external...

Stipe {F}{E}

Latin. stipitis - post or stock.

A mucous stalk when referring to diatoms.

Example:

Synopsis of the British Diatomaceae by W. Smith.
(Introduction)

In some species the Diatom is provided with a gelatinous pedicle or stipes by which it is united...

Stipitate {P}

Latin. stipitis - post or stock.

A term for a diatom that forms a mucous stalk by means of which it is attached to the

substrate.

Example:

The Morphology of the Diatom Frustule
by H.G. Barber & E.Y. Haworth (Cymbella)
Cells may be stipitate...or in mucus tubes...

Stochastic {E}

Randomly patterned

Example:

The importance of diatom cell size in community
analysis(P. Snoeijs) [2002]
...larger species usually have lower abundances and their
occurrence in the diatom counts is stochastic.

Stoffwechsel {F}

German.

See Metastasis

Example:

Notes on Diatoms by F.B. Taylor
85 - ...through which in many cases matastasis
(stoffweschel) is effected.

Stout {F}

Old French. estout.

Robust, strong.

Example:

A Treatise on the British Freshwater Algae
by G.S. West & F.E. Fritsch.
(Tabellariaceae)
Frustules stout, tabular in girdle-view...

Strata {F}

Latin. stratum - something spread.

A layer.

Example:

H.M.S. Challenger - Report on the Diatomaceae
(Eupodiscus insutus)
...the existence in the cell walls of two strata...

Stratification {P}{O}{Hy}

Latin. stratum - to spread.

Layering of water masses with pycnoclinal interfaces separating the layers. Also
pertaining to rock formations and sediments.

Example:

Stratified net haul {P}

See discrete depth sampling.

Example:

Stratocoenosis {H}

The community of a particular vegetational or physical habitat layer, e.g. the
hypolimnion of a stratified lake.

Example:

Stratum {F}

Latin. stratum - to spread.

A layer (a layer of cells when referring to living tissue). Also used as a geological term.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(Nitzschia genus)

Frustules free, rarely enclosed or united into a stratum.

Stream mile {Hy}

A distance of 1 mile along a line connecting the midpoints of the channel of a stream.

Example:

Stream order {Hy}

A ranking of the relative sizes of streams within a watershed based on the nature of their tributaries. The smallest unbranched tributary is called first order, the stream receiving the tributary is called second order, and so on.

Example:

Diatom assemblages distribution in catalan rivers, NE Spain, in relation to chemical and physiographical factors (M. Leira) [2005]

...diatom community structure could also be related to temperature, altitude and stream order...

Stream reach {Hy}

A continuous part of a stream between two specified points.

Example:

The Spatial Heterogeneity of Periphyton in Eight Southeastern Ohio Streams (E. K. Hollingsworth) [2007]
Results indicated that at intermediate scales, within a stream reach, diatoms appear to be patchily distributed.

Streamflow {Hy}

The discharge of water in a natural channel or a specific current in a water body.

Example:

Drifting along: The fate of diatoms and organic material in a Dry Valley stream, Antarctica (L. F. Stanish) [2009]
Previous work demonstrated that historical stream flow conditions influence diatom community composition and diversity...

Striae (pl.), Stria (sing.) {F}

Latin. stria - a furrow, groove or channel.

A line of pores, punctae, spots or dots.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
(Anaulus debilis)

...transverse costae, finely striate, striae forming transverse lines.

Striae Frequency {F}

Latin. stria - a furrow, groove or channel. plus Latin. frequens - to stuff.

The number of striae that exist in a given measurement.

Example:

Conspectus of the Families and Genera of the
Diatomaceae - The lens.

(*Amphora ventricosa*)

Striae frequency about 22 in .001".

Striated, Striation {F}

Latin. stria - a furrow, groove or channel.

Bearing striae.

Example:

Pritchard's Infusoria

(*Synedra capitata*)

...striated, straight and...

Striatum {F}

Latin. stria - a furrow, groove or channel.

Pertaining to the striae.

Example:

On Some New Species of Fresh-water Diatomaceae
by W. Gregory.

(*Cymbella turgida*)

...differs in form, in the shape of the apices, in
striatum and in general aspect.

Striolate {F}

Latin. stria - a furrow, groove or channel.

Bearing striae.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(*Centropors* genus)

...margin decorated with small arcuate compartments,
striolate and separated from the disc...

Striulations {F}

Latin. stria - a furrow, groove or channel.

Example:

A Treatise on the British Freshwater Algae
by G.S. West & F.E. Fritsch.

(*Anomoeonis*)

...valves with transverse striae composed of fine dots or
striulations which are arranged in a wavy...

Strut {F}

Old English. strutian.

A rod or prop of hyaline material.

Example:

Notes on Diatoms by F.B. Taylor

82 - ...often strengthened by costae or struts or
buttresses on the inner side;...

Studded {F}

Old English. studu - a post.

Having projecting knobs or bosses.

Example:

New Species of Fossil or Pelagic Marine Diatoms

by J. Brun. Trans. J. W. Barker.

(*Clavicula arenosa*)

Valve view studded with small beads...

Styliform {F}

Latin. stilus - a pen or Greek. stylos - a column.

Bristled or likened to a bristle.

Example:

Conspectus of the Families and Genera of the Diatomaceae -

The lens.

(*Amphora terroris*)

...suddenly attenuated into styliform beaks...

Subaerial {P}

Referring to organisms living at or close to the surface of the earth. Many diatoms found in soil could thus be described as subaerial.

Example:

The distribution of diatom flora in ice caves of the northern Yukon Territory, Canada (Bernard Lauriol) [2006] Approximately 20% of diatoms are allochthonous and originate from external biotopes and habitats (pool, creek and fall), with the remaining 80% of diatoms from subaerial habitats in nearby cave entrances.

Subantarctic {H}

Latin. sub - under or near,

Referring to a pelagic oceanic species occurring in the Southern Ocean West Wind Drift zone between the Subtropical Convergence and the Antarctic Convergence.

Example:

Biogeography and Ecology of Freshwater Diatoms in

Subantarctica (B. Van de Vijver) [1999]

Unfortunately, the Subantarctic diatom flora is only poorly studied.

Subarctic {H}

Latin. sub - under or near,

Referring to a pelagic oceanic species occurring in the area of the Pacific Subarctic Water Mass or in the Atlantic north of the northern subtropical convergence.

Example:

Lake Water Salinity and Periphytic Diatom Succession in Three Subarctic Lakes, Yukon Territory, Canada (Allison J. Veres) [1994]

...these subarctic lakes appear to undergo patterns of seasonal change relatively similar to those of lakes in more southern regions, such as the southern interior of British Columbia and the Canadian Prairies. The periphytic diatom assemblages of all three study lakes underwent

marked successional changes in relative abundance over the study period.

Subdistant {F}

In combination. Latin. sub - near. Latin. di - apart. Latin. stans - to stand.

Used to describe the degree to which two features are separated.

Example:

Synopsis of the British Diatomaceae by W. Smith.

(*Pinnularia peregrina*)

...costae radiate, reaching central line, subdistant...

Subjacent {F}

In combination. Latin. sub - under. Latin. jacere - to lie.

Underlying.

Example:

New Species of Fossil or Pelagic Marine Diatoms

by J. Brun. Trans. J. W. Barker.

(*Entogonia furcata*)

...and bears a punctate triangle subjacent as in E. Abercrombieanus.

Sublittoral zone {H}

Latin. sub - under or near,

The neritic coastal zone extending from immediately below the littoral (qv) to the shelf break.

Example:

Resuspension in the Shallow Sublittoral Zone of a Macrotidal Estuarine Environment (S. Demers) [1987]

The observation of a diatom bloom in the shallow sublittoral zone in mid-July...

Submergence {P}

Latin. submersum - to plunge.

A tendency for shallow-dwelling coastal cold temperate marine organisms to follow isotherms in any equatorward extension of range, thus occurring at greater depths when closer to the equator. Has been applied, with very limited evidence, to certain pelagic forms. Also refers to the emergence/submergence sequences of land masses.

Example:

Submergent {P}{Hy}{O}

Latin. submersum - to plunge.

Pertaining to a plant or plant structure growing entirely under water; submersed.

However, occasionally used to describe a land mass that has in the past either sunk (become submergent) or risen (was submergent).

Example:

Subpolar {H}

Latin. sub - under or near,

Oceanic zone where surface temperatures exhibit an annual excursion between (about) 5 - 15°C.

Example:

Marine diatoms in polar and sub-polar environments and

their application to Late Pleistocene paleoclimate reconstruction (X. Crosta) [2011]

Diatoms are one of the major phytoplankton groups in polar and sub-polar marine environments along with green algae and chrysophytes.

Substrate {H}{O}{Hy}

Latin. sub - under or near, Latin. sternere - to spread.

(1) The material or substance on which an enzyme acts.

(2) A surface on which an organism grows or is attached [preferred use in this context is substratum (qv)].

(3) An underlying layer; a substratum (qv).

Example:

Comparison of clay tile, sterilized rock, and natural substrate diatom communities in a small stream in Southeastern Michigan, USA (M. L. Tuchman) [1980]
Clay tiles yielded diatom communities with the least variability between replicate samples, and the greatest similarity to the natural substrate assemblage.

Substrate size {Hy}

The diameter of streambed particles such as clay, silt, sand, gravel, cobble and boulders.

Example:

Effects of physical disturbance and canopy cover on attached diatom community structure in an Idaho stream (C. T. Robinson) [1987]

She found that substrate size had a significant effect on diatom colonization.

Substratum, Substrate {P}

In combination. Latin sub - under. Latin. stratum - spread.

A foundation.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(Hyalodiscus genus)
...for attachment by a slimy pad to a substratum.

Subtidal {P}{H}{Hy}

The zone of the shoreline that is below low tide and always covered by water.

Example:

Role of Algal Eukaryotes in Subtidal Columnar Stromatolite Formation (S. M. Awramik) [1988]

...the subtidal columnar stromatolites have a significant component of algal eukaryotes dominated by motile diatoms with mucilaginous tubes...

Subtropical {H}{Hy}

Latin. sub - under or near,

Oceanic zone where surface temperatures exhibit an annual excursion between (about) 15 to 30° C during the year.

Example:

Succession of phytoplankton assemblages in relation to the hydrography in the southern Bay of Biscay (E. Fernández)
An assemblage of subtropical diatom and dinoflagellate species was found in late autumn associated with the intrusion of high salinity waters...

Subulate {F}

Latin. subula - an awl.

Narrow and tapering to a point. See also Awl-shaped.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
(Syndetocytis)
...one or more subulate spines...

Sudd {P}

Arabic. sudd - obstruction.

A floating mass of plant material.

Example:

Environmental changes at Lake Cheshi, Zambia since 40000 years B.P. (C. Stager) [1988]
High deposition rates in the late Holocene could reflect sudd encroachment or erosion from local land clearance.

Sulcus (sing.), Sulci (pl.) {F}

Latin. sulcus - a furrow.

A groove, furrow or fissure. This named feature is sometimes no more than the flexure of the valve.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
(Navicula distans)
Rape placed in a sulcus, inflected on each side of the central nodule...

Sulcate {F}

Latin. sulcus - a furrow.

Bearing a groove, furrow or fissure. This named feature is sometimes no more than the flexure of the valve.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
(Tryblionella genus)
Valves generally sulcate, undulate.

Summit {F}

Latin. summum - highest.

The highest point of a feature or the top of a frustule in girdle view (shortest width upward).

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
(Licmophora tinctoria)
Girdle face very broad, abruptly truncate at the base, rounded at the summit;...

Super-elevated {F}

Latin. super - above, plus Latin. levare - to raise.

Seemingly raised above and separate from the valve on which the feature lies.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.

(Navicula superimposita)

...with longitudinal portion considerably super-elevated, in such a manner as to simulate a second smaller valve placed on the lower...

Superior {F}

Latin. super - above.

Relating to the larger of two features. Usually the extremities of the valve.

Example:

H.M.S. Challenger - Report on the Diatomaceae

(Asterionella gracillima)

...instead of being linear in the parts succeeding the dilated base, it is sensibly swollen at its superior extremity.

Superior Angle {F}

Latin. super - above.

The angle at the pole of the valve on the larger section of the valve bisected across its middle at right angles to the apices.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.

(Licmophora Anglica)

...very cuneate, with superior angles rounded.

Superior Apex {F}

Latin. super - above.

The apex of the valve on the larger section of the valve bisected across its middle at right angles to the apices.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.

(Peronia erinacea)

Valve narrow, cuneate, with superior apex rostrate-capitate...

Superior Half, Superior Portion, Superior Third {F}

Latin. super - above.

An area of the valve (half, portion, or third) on the larger section of the valve bisected across its middle at right angles to the apices.

Example:

(2) A Treatise on the Diatomaceae by Henri Van Heurck.

(Licmophora Anglica)

Girdle face much inflated at the superior portion...

Superior Valve {F}

Latin. composition of superus - on high (super - above) plus Latin. valvae - leaves or folds.

The 'lid', largest and oldest valve.

Example:

H.M.S. Challenger - Report on the Diatomaceae (Gephyria n.sp.)
...and particularly on the superior valve - a circumstance which goes to justify...

Superposed {F}

Latin. super - above. French. poser - to place.

To be placed above another feature.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
(*Surirella spiralis*)

...with raphes parallel and superposed on the two valves.

Suprabenthic {H}

Latin. supra - above,

Living above but close to the substratum; hyperbenthic. (cf epibenthic, endobenthic).

Example:

Effect of sinking spring phytoplankton blooms on lipid content and composition in suprabenthic and benthic invertebrates in a cold ocean coastal environment (C. C. Parrish) [2009]

Lipids were measured in 19 suprabenthic and benthic invertebrate taxa from 5 phyla to determine their responses to a sinking spring diatom bloom.

Supralithion {H}

Latin. supra - above,

Aquatic organisms swimming above a rocky substratum but deriving their food from the surface of that substratum.

Example:

Supralittoral zone {H}

Latin. supra - above,

The seashore zone immediately above the littoral and above the range of tidal submergence although still affected by sea spray.

Example:

Antarctic Specially Protected Area No 161 Terra Nova Bay, Ross Sea

In the supralittoral zone, only cyanobacteria and diatoms colonise the hard substrates,...

Suprapelos {H}

Latin. supra - above,

Aquatic organisms swimming above a soft mud substratum but deriving their food from the surface of that substratum.

Example:

Suprapsammon {H}

Latin. supra - above,

Aquatic organisms swimming above a sand substratum but deriving their food from the surface of that substratum.

Example:

Surface {F}

In combination. Latin. super. Latin. face.

Referring to a valve face. Also Valve Surface.

Synonymous with Valve Face.

Example:

Arachnoidiscus by N.E. Brown.

(Arachnoidiscus oamaruensis)

Viewed binocularly the outer surface of the valve is rather flat or slightly concave...

Surface aquatic plants {H}

Plants, typically freshwater flowering plants, that float on the surface of the water (eg water lilies, water hyacinths).

Example:

Surface layer {H}

See mixed layer.

Example:

Diatoms respire nitrate to survive dark and anoxic conditions (A. Kamp) [2011]

Mass sinking of pelagic diatom blooms is triggered by nutrient depletion in the surface layer of the water column.

Surmounted {F}

Old French. surmunter.

To be on top of another feature or the valve itself.

Example:

Some Fossil Diatoms from Barbados

by G. Dallas Hanna & A.L. Brigger

(Pyxilla boothi)

...this is surmounted by a massive vertical column about ten times as long as the valve diameter;...

Suspended (as used in tables of chemical analyses) {Hy}

The amount (concentration) of undissolved material in a water-sediment mixture. It is associated with the material retained on a 0.45- micrometer filter.

Example:

Suspended sediment {Hy}

Particles of rock, sand, soil, and organic detritus carried in suspension in the water column, in contrast to sediment that moves on or near the streambed.

Example:

Suspended sediment characteristics and drainage basin scale on the Canadian Prairies (G. Crosby)

In general, suspended sediment particles at upstream sites consisted of diatoms and of composite particles comprised of diatoms and mineral grains cemented with organic matter and clay (illite).

Suspended-sediment concentration {Hy}

The velocity-weighted concentration of suspended sediment in the sampled zone (from

the water surface to a point approximately 0.3 foot above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L).

Example:

Working with Natural Cohesive Sediments (K. S. Black) [2002]

The diatoms stabilized the sediment as described and enhanced deposition of fine sediment leading to a dramatic drop in suspended sediment concentration in the main channel.

Suspended solids {Hy}

Different from suspended sediment only in the way that the sample is collected and analyzed.

Example:

Benthic Diatoms as Benthic Diatoms as Indicators of Stream Sediment Concentration in Hong Kong (M. D. Dickman) [2005]
When water carried by a stream has a high concentration of suspended solids, benthic diatoms in the stream are often covered in a layer of silt.

Suture, Sutural Ring, Sutural Zone {F}

Latin. sutura - a seam.

A junction or meeting of margins. Also Furrow, Groove.

Example:

Marine Diatoms of the Philippine Islands by A. Mann (Hyalodiscus annulus)
...separated from the rest of the valve by a wide, hyaline and glistening, sutural ring....

Swale {Hy}

A slight depression, sometimes filled with water, in the midst of generally level land.

Example:

Thai Evidence for Recurrent Indian Ocean Tsunamis of the Last 3000 Years (K. Jankaew) [2007]

In addition, the fossils of freshwater diatoms have been found in the peaty soils of the swales, both beneath the 2004 deposits and beneath the underlying sand lentils as well.

Swamp {Hy}

An area intermittently or permanently covered with water, and having trees and shrubs.

Example:

Diatoms and Tonsteins as Paleoenvironmental and Paleodepositional Indicators in a Miocene Coal Bed, Costa Rica (J. D. Sanchez) [1987]

Achnanthes exigua and the remaining diatom species are benthic forms that lived in shallow fresh-water to slightly acidic swamp environments.

Swarm Spores {P}

Old English. swarm. plus Greek. spora - a seed.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(Reproduction)
Swarm spores or microspores have been observed in a few diatoms...

Swash {O}

Intermittent landward flow of water across a beach where surf is breaking.

Example:

Seminavis atlantica Garcia, a new psammic diatom (Bacillariophyceae) from southern Brazilian sandy beaches (M. Garcia) [2007]

Seminavis atlantica occurs sporadically in the samples. It occurs in the middle of the beach more often than in the swash zone.

Swollen {F}

Old English. swollen.

Inflated. This is usually applied to a portion of a valve.

Example:

Diatoms of British Coastal Plankton by J. B. Sykes.
Cell swollen at one end only; usually in spiral...

Symbiosis {P}{O}

In combination. Greek. syn - together. Greek. bios - livelihood.

A mutually beneficial partnership between organisms of different kinds.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(Parasites)
Even such small plants as diatoms are subject to infestation by parasites, and in many cases symbiosis occurs...

Symmetrical {F}{G}

Greek. symmetria - together.

Exact correspondence of parts either side of a given line or plane.

Example:

Synopsis of the British Diatomaceae by W. Smith.
(Cocconeis genus)

...but in other respects the valves are symmetrical...

T

Taberculated {F}

Latin. tabes

This possibly refers to 'tabes'. i.e. wasting away or emaciated.

Example:

H.M.S. Challenger - Report on the Diatomaceae
(Coccinodiscus rudis)

On account of these papillae the external surface, when seen from the zonal aspect, is taberculated in appearance.

Tablet {F}

Old French. tablete.

A slab or a sheet.

Example:

- (1) Pritchard's Infusoria
(Achnanthes)

They are developed in the form of simple pedicled chains (tablets or bands), which look like little standards.

- (2) Report on the Irish Diatomaceae by E. O'Meara.
(Synedra tabulata)

Frustules large, adhering in tablets on a short stipes.

Tabular {F}{G}

Latin. tabula - a table.

In the form of a table (usually a table top) A slab.

Example:

Pritchard's Infusoria
(Striatella arcuata)

Lorica tabular, nearly square...

Tacheion {P}

Greek. tachys - swift.

Actively moving aquatic organisms comprising both crawling (herpon) and free-swimming (natatory) forms.

Example:

Taper {F}

Old English. tapor.

Gradually becoming smaller towards the end (usually an apex when considering the frustule).

Example:

Some Fossil Diatoms from Barbados
by G. Dallas Hanna & A.L. Brigger
(Aulacodiscus petersi)

...these pyriform areas taper toward the center.

Taphonomy

Greek. taphos - burial, Greek. nomos - law

The study of the conditions and processes by which organisms become fossilized. The conditions and processes of fossilization. Taphonomy is the study of the fate of the remains of organisms after they die. The term taphonomy was introduced to palaeontology in 1940 by a Russian scientist, Ivan Efremov, to describe the study of the transition of remains, parts, or products of organisms, from the biosphere, to the lithosphere, i.e. the creation of fossil assemblages.

Example:

Diatom preservation: differential preservation of sedimentary diatoms in two saline lakes (R. J. Flower) [2009]

Taphonomy is an issue for diatom valves in both modern and sedimentary environments as well as for archival and other diatom procedures.

Tarn {Hy}{E}

A relatively small and deep, steep-sided lake or pool occupying an ice-gouged basin amid glaciated mountains.

Example:

The Diatoms of a Sediment Core from Blea Tarn, Langdaleby (E. Y. Haworth) [1969]

...suggests that diatoms were not so abundant in the tarn during the ...

Taxa richness {Hy}

See Species richness.

Example:

Comparative Study of Macroinvertebrates and Diatoms as Bioindicators of River Water Quality in Addis Ababa (T. A. Wassie) [2008]

The lowest diatom taxa richness (4 taxa) was observed near the discharge point of Awash Tannery...

Taxon (plural taxa) {Hy}{P}{E}

Greek .tassein. - to arrange.

The term used to describe the various names applied to groups and individuals. Any identifiable group of taxonomically related organisms.

Example:

Freshwater Algae - Their Microscopic World Explored by H. Canter-Lund & J.W.G. Lund.

Taxonomy {P}{E}

Greek .tassein. - to arrange.

The process of grouping and grading organisms. The basis of classification.

Example:

Freshwater Algae - Their Microscopic World Explored by H. Canter-Lund & J.W.G. Lund.

Teat-like {P}

Example:

Freshwater Algae -their Microscopic World Explored by H. Canter-Lund & J.W.G. Lund
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Teeth {F}

Old English. teth.

See Dentate.

Example:

Marine Diatoms of the Philippine Islands by A. Mann (Surirella suluensis)

...the outer edges are not wedge shaped with one to three teeth on the marginal side;...

Telmatium {H}

A wet meadow or marsh community.

Example:

Temperate Zone {H}

Example:

Diatoms in Eastern Australia by Neils Foged.
(Licmophora paradoxa)

Up to now mostly found in the temperate zones.

Tenacious

Latin. tenere - to hold.

Holding fast, tough or stubborn.

Example:

Synopsis of the British Diatomaceae by W. Smith.
(Rhabdonema genus)

Filaments tenacious.

Teratological {P}

Greek. teras - a monster.

A malformed or abnormal specimen.

Example:

H.M.S. Challenger - Report on the Diatomaceae
(Rhizosolenia japonica)

...it cannot be regarded as a teratological specimen, but must be looked upon as the type of the true species.

Terminal Fissure {F}

Greek. terma - end. plus Latin. fissum - to cleave.

A hole or slit in the terminal (polar) nodules.

Raphe ends, terminal pores, polar terminals.

Example:

(1) A Treatise on the British Freshwater Algae by G.S. West & F.E. Fritsch.

...and cytoplasm can pass from it into the terminal fissure as so into the outer fissure of the raphe.

(2) The Diatomaceae of Philadelphia and Vicinity by C.S. Boyer. (Pinnularia blandita)

...median line with small semicircular terminal fissures.

Terminal Nodule {F}

Latin. terminus. Also Greek. terma - end.

See Polar Nodule. See also Helictoglossae

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
(Peronia erinacea)

...terminal nodules distant from the apices;...

Terminal Pore {F}

Latin. terminus. Also Greek. terma - end. plus Greek. poros - a passage.

Raphe ends, terminal pores, polar terminals.

Example:

New and Rare Diatoms from Oregon and Washington
by H. E. Sovereign.

(Pinnularia subpalousiana)

Raphe straight, threadlike, central pores bent to one side and terminal pores toward the same side...

Terminal Setae {P}

The seta on the terminal valves of a chain.

Example:

Rines, J.E.B. & P.E. Hargraves - The Chaetoceros
- Bibliotheca Phycologica (79)

Terminal Valve {P}

The end valves in a chain.

Example:

Rines, J.E.B. & P.E. Hargraves - The Chaetoceros
- Bibliotheca Phycologica (79)

Terminate {F}

Latin. terminus - end.

In this context - ending.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.
(Amphora macilenta)

...which are again slightly expanded and terminate so that it has very short, square, produced ends.

Terrace {F}

French. terrasse. Also Italian. terrazza. Also Late Latin. terracea - an earthen mound. Also Latin. terra - the earth.

A mid-frustule ring of silica at some point between the central nodule and the margin.

Usually with rays blending into it from one or both sides.

Usually only referenced in relation to centric forms.

Example:

Terrestrial {H}{O}

Latin. terrestris - the earth.

Living or growing on land.

Example:

A Treatise on the British Freshwater Algae
by G.S. West & F.E. Fritsch.
(Naviculoideae)

...more rarely enclosed in mucous tubes, some species terrestrial.

Terrigenous mud {H}

Latin. terra - earth, Latin. genere - to produce.

A marine sediment composed of at least 30% silt and sand derived from the land.

Example:

Geotechnical properties of sediment on the Kodiak continental shelf and upper slope, gulf of Alaska (M. A. Hampton) [1989]

...upper slope comprise three distinct compositional types: terrigenous mud, diatom-rich mud, and ash-rich sandy mud.

Tertiary {H}{O}

Latin. tertius - third.

The first period of the Cenozoic Era, covering the time span between 65 and 3 million

years ago.

Example:

Fossils by Richard Moody.

...characteristic of Tertiary Mediterranean limestones.

Tertiary Ray {F}

Latin. tertius - third. plus Latin. radius - a rod. Also Old French. rais.

The rays, of lesser prominence than and between the secondary rays in a centric form.

See also Secondary Ray, Primary Ray, Ray.

Example:

Arachnoidiscus by N.E. Brown.

(Arachnoidiscus ornatus)

...tertiary rays as long as or shorter than the marginal ledge is broad;...

Tertiary Structure {F}

Latin. tertius - third. plus Latin. structum - to build.

A term used to describe features on a secondary structure.

Example:

Notes on Diatoms by F.B. Taylor

81 - ...and are spoken of as secondary structure; and in some instances, markings upon these, or tertiary structure has been detected.

Tetragonal {F}

In combination. Latin. tetra - four. Latin. angulus - angle.

Usually pertaining to the valve - four sided when viewed from above or below (valve view). However, may be used to describe any feature with four internal angles.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.

(Ditylum Brightwellii)

Valves triangular or tetranqular, with margins straight...

Thalassic {H}

Greek. thalassa - sea.

Pertaining to the seas or deep ocean waters.

Example:

Salinity Tolerance of Diatoms from Thalassic Hypersaline Environments (E. Clavero) [2000]

Thirty-four benthic diatom strains were isolated from thalassic hypersaline marine environments and their salinity tolerance characterized

Thallus {P}

Greek. thallos - a young shoot.

The name sometimes given to the mucous membrane or stalk that attaches some diatoms to a substrate.

Example:

Van Heurck Treatise.

Thalweg {Hy}{E}

The line of maximum depth in a stream. The thalweg is the part that has the maximum velocity and causes cutbanks and channel migration.

Example:

Thanatocoenosis {P}

Greek. thanatos - death,

An assemblage of organisms brought together after death (taphocoenosis, see taphonomy).

Example:

Theca {F}

Latinised Greek, theke - a case or sheath

Strictly a case or sheath. in the case of diatoms relates to the entire frustule.

See also Epitheca and Hypotheca.

Example:

The Morphology of the Diatom Frustule

by H.G. Barber & E.Y. Haworth

Theca with cingulum composed of several girdle bands.

Thermal stratification {P}{O}

The layering or vertical division of the water column based on temperature differences.

Example:

The control of sub-surface maxima of diatoms in a stratified lake by physical, chemical and biological factors (M. C. Davey) [1989]

The occurrence of sub-surface maxima of planktonic diatoms, and other algae, following the onset of thermal stratification of lakes has long been recognized...

Thermium {H}

Greek. thermos - hot.

A hot spring community.

Example:

Thermocline {P}{O}{E}

In conjunction. Greek. thermos - hot. Latin. clinare - to lean.

The point at which warmer surface waters and the colder waters at depth, meet.

Example:

Diatoms of British Coastal Plankton by J. B. Sykes.

...a marked discontinuity can develop between the warm surface layer and the deep cold water. This continuity is called a thermocline.

Thermohaline circulation {P}

Greek. thermos - hot,

Oceanic circulation caused by induction of density differences between water masses; usually such processes result in the cooling (and sometimes, through freezing of sea ice, increasing the salinity) of water at the surface at high latitudes(eg North Atlantic Deep Water, Antarctic Bottom Water) or an increase in salinity (and therefore density) through evaporation (eg Red Sea, Mediterranean Sea outflows).

Example:

Thread {P}

Old English. thraed.

A word sometimes used to describe a filamentous colony. At other times used to describe a mucilaginous link, one frustule to another.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(*Thalassiosira Nordenskioldii*)
Cells short, united into long chains by a fine thread.

Tidal current {O}

Currents associated with the cyclical rise and fall of the water level as described in the definition of tide.

Example:

Fossil whale preservation implies high diatom accumulation rate in the Miocene-Pliocene Pisco Formation of Peru (L. R. Brand) [2004]
Sedimentary structures also indicate tidal current action and storms, which could have acted to concentrate diatoms in the shallow bays along the Peruvian...

Tidal flat {H}{Hy}

Shallow smooth areas of sea bottom (frequently in estuaries) that are exposed at low tides, usually barren of macroscopic vegetation.

Example:

Evidence for earthquake-induced subsidence about 1100 yr ago in coastal marshes of southern Puget Sound, Washington (B. L. Sherrod) [2001]
At McAllister Creek and Nisqually River, low-marsh and tidal-flat diatoms are abundant in laminated mud directly over high marsh peat.

Tidal Freshwater {H}{P}

Freshwater (0-0.5ppt) that is tidally influenced.

Example:

Seasonal Phytoplankton Development Within Three Rivers In The Lower Chesapeake Bay Region (H. G. Marshall) [1992]
...concentrations of the tidal freshwater diatoms, chlorophytes and cyanobacteria were found above the pycnocline (moving downstream), than below the pycnocline...

Tidal marsh {H}

Tidal flats covered with pasture-like vegetation, always dominated by halophytic angiosperms (eg *Spartina*, *Juncus*, *Salicornia*).

Example:

Great Cascadia earthquakes and tsunamis of the past 6700 years, Coquille River estuary, southern coastal Oregon (R. C. Witter) [2003]
The marsh-upland transition zone is characterized by an absence of tidal marsh diatom species in upland soils...

Tidal zone {H}

The zone along the shoreline directly affected by the rise and fall of the tides, between the level of the highest high tide and lowest low tide.

Example:

Diatom assemblages from a turbid coastal plain estuary: Río de la Plata (South America) (M. Licursi) [2006]
The greatest number of species, mainly pennate taxa, were observed in the freshwater tidal zone.

Tide {P}{Hy}{O}{E}

Old English. tid.

Rise and fall of sea level in response to the gravitational attraction of the moon and sun.

Example:

Observations of resuspended diatoms in the turbid tidal edge (C. H. Lucas) [2003]

It would seem that as the tide recedes, resuspended benthic diatoms and large *Coscinodiscus* sp. cells become concentrated in the shallow...

Tiphic {H}

Pertaining to ponds.

Example:

Tolerant species {Hy}

Those species that are adaptable to (tolerant of) human alterations to the environment and often increase in number when human alterations occur.

Example:

Assessment of Water Pollution using Diatom Community Structure and Species Distribution – A Case Study in a Tropical River Basin (I. S. A. Khan) [1990]

The most tolerant species were *Nitzschia palea* followed by *Gomphonema parvulum* and *Pinnularia braunii*.

Tombolo {E}

A sand belt or bar connecting an island with the mainland.

Example:

Stratigraphy of the Iguape-Cananeia Lagoonal Region Sedimentary Deposits, Sao Paulo State - Brazil (S. Petri) [1973]

Sandy deposits formed as spits and tombolos are built and destroyed and at the same time bars move actively on the submarine bottoms.

Tongue-shaped {F}

Old English. tunge.

Describing a feature that is finger-nail shaped. This description has been applied to many features.

Example:

The Diatomaceae of Philadelphia and Vicinity by C.S. Boyer.

(*Diploneis crabro* var. *pandura*)

Valve constricted, segments tongue-shaped; central nodule small;...

Torrenticulous {H}

Latin. torrens - boiling.
Living in river torrents.
Example:

Torrid {H}

Latin. torridus - to parch.
Usually referring to the belt around the earth between the tropics.
Example:
A Treatise on the Diatomaceae by Henri Van Heurck.
(Stephanopyxis)
...and inhabit especially the torrid and arctic zones.

Torsive {F}

Latin. tortum - to twist.
Twisted. When the apices are twisted in different directions. As in *Surirella spiralis*.
See also Twisted.
Example:
A Treatise on the Diatomaceae by Henri Van Heurck.
(*Rhoicosigma* genus)
Frustules more or less torsive, achnanthiform.

Tortuous {F}

Latin. tortum - to twist.
Winding hither and thither. Often used when describing the path of a raphe.
Example:
Marine Diatoms of the Philippine Islands by A. Mann
(*Navicula retrostraus*)
...raphe a trifle tortuous, especially near the centre,
its outer ends curved and reaching the apices...

Toxicant {O}

Substance dissolved in water that produces a harmful effect on organisms, either by an immediate large dose or by small doses over a period of time
Example:
Trace metals, PCBs, and PAHs in benthic (epipellic) diatoms from intertidal sediments; a pilot study (J. Stronkhorst) [1994]
Knowledge of the level of contamination in benthic diatoms is of major importance to recognize possible effects on growth rate and species composition of the benthic diatom populations and to understand the accumulation of toxicants into the foodchain.

Transapical {F}

In combination. Latin. Trans – across. Latin. Apex – the point or summit.
Used in conjunction with geometrical and structural elements to describe their relationship with the frustule as a whole.
Example:
Diatoms in Eastern Australia by Neils Foged.
(*Navicula pseudo-sigma*)
...and very dense transapical striae.

Transapical Axis {G}

In combination. Latin. trans - across. Latin. apex - the tip or top of thing, the point or summit. plus axis - an axle, a broad plank.

A straight line through the central nodule bisecting the margin at its nearest point on both sides.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(Chaetoceros Janischianus)

...the other half parallel to the transapical axis on both sides of the chain.

Transapical Plane {G}

In combination. Latin. trans - across. Latin. apex - the tip or top of thing, the point or summit. plus planus - level flat.

An axial plane perpendicular to the apical axis.

Example:

Rines, J.E.B. & P.E. Hargraves - The Chaetoceros
- Bibliotheca Phycologica (79)

Transapical View {M}

In combination. Latin. trans - across. Latin. apex - the tip or top of thing, the point or summit.

The view with the apical axis toward the observer. (Narrow Girdle View)

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(Chaetoceros mitra)

Terminal bristles diverging in transapical view, in apical view parallel and converging.

Transition zone {H}{O}

Areas with mixed water mass properties. Classic examples include boundary current extensions and the boundary between the subtropical gyres and high latitude circulation systems.

Example:

Accumulation of algal pigments and live planktonic diatoms in aphotic sediments during the spring bloom in the transition zone of the North and Baltic Seas (J. L. S. Hansen) [2003]

The sediment contents of algal pigments and live planktonic diatoms were measured in cores sampled at 6 stations with aphotic sediments at depths between 27 and 55 m located in the transition zone between the Baltic Sea and the Skagerrak.

Transverse {G}

Latin. transversus - lying across, athwart, crosswise.

Across the shortest diameter, or between two linear features.

Example:

Arachnoidiscus by N.E. Brown.
(Arachnoidiscus major)

Transverse partitions between the rays rather broad, irregular and often toothed.

Transverse Axis {G}

Latin. Transversus - lying across, athwart, crosswise. plus Axis - an axle, a broad plank.

See Transapical Axis.

Example:

Electroluminescence and Photoluminescence from Nanostructured Diatom Frustules Containing Metabolically Inserted Germanium (C. Jeffryes) [2008]

The vertical pore alignment lies on the transverse axis (width) of the diatom frustule...

Trapezoid(al), Trapezium {G}

A latinised form of Greek. trapezion. Literally - four legged - Latin tetra - four, peza - a foot.

The American definition of this shape differs from the British one so care must be taken when examining texts and due consideration given to their country of origin. A trapezoid (trapezium) shape in the States is any four sided shape where no sides are parallel whereas the British definition is a four sided shape where two of the sides are parallel.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.

(Isthmia enervis)

Girdle face elongated, trapezoidal, with conspicuous processes....

Trefoil-shaped {F}

Latin. trifolium - three leaved.

See Trifoliate.

Example:

Simbirsk Diatoms by Otto N. Witt

(Triceratium exornatum)

Characteristic of it is the trefoil-shaped rising in the middle of the shield.

Triangular {G}

In combination. Latin. tri - three. Latin. angulus - angle.

Usually pertaining to the valve - three sided when viewed from above or below (valve view). However, may be used to describe any feature with three internal angles.

Example:

Diatoms of British Coastal Plankton by J. B. Sykes.

Cell a triangular prism; may have...

Tributary {Hy}{E}

A river or stream flowing into a larger river, stream or lake.

Example:

Composition and dynamics of a highly diverse diatom assemblage in a limestone stream (S. Sabater) [1990]

...a small tributary of the main river (the Gurri) was sampled for a year. None of the other tributaries within the Ter basin has a diatom flora similar to...

Tridentate {F}

In combination. Latin. tri - three. Latin. dentus - tooth.

Three-pronged. Not necessarily toothed.

Example:

Pritchard's Infusoria

(*Echinella flabellata*)

...the lorica is in the form of a truncated wedge, obtusely tridentated, and longitudinally striated.

Trifoliate {G}

Latin. trifolium - three leaved.

The valve bearing three lobes or leaves, as in a clover leaf.

Example:

Marine Diatoms of the Philippine Islands by A. Mann

(*Biddulphia trisinua*)

Valve triangular, trifoliate, the sides deeply concave, the angles broad and blunt...

Trigonal {F}

In combination. Greek. tri - three. Greek. gonia - an angle.

Triangular.

Example:

New Species of Fossil or Pelagic Marine Diatoms

by J. Brun. Trans. J. W. Barker.

(*Terpsinoe inflata*)

Valve view trigonal, sides with turgid angles.

Trilinear {G}

In combination Latin. tri - three. Latin. linearis - pertaining to or consisting of lines.

Having three arms (but not joined to form a triangle)

Example:

Miocene and Pliocene Marine Diatoms from California

(Walter W. Wornadt, Jr.) [1967]

This species is distinguished by its conical valve, coarse areloae, radially arranged in a trilinear pattern and by the narrow border.

Trilobed {F}

In combination. Greek. tri - three. Greek. lobos - a lobe.

Having three lobes.

Example:

New Species of Fossil or Pelagic Marine Diatoms

by J. Brun. Trans. J. W. Barker.

(*Porodiscus calyciflos*)

...surmounted towards its base by a crown of flat protruberances with trilobed ends...

Trimorphic {P}

In combination. Greek. tri - three. Greek. morphe - form.

Having three different forms (of the same species).

Example:

Note on Diatoms by F.B. Taylor.

(Structure and Markings - 64)

...making the diatoms dimorphic, trimorphic, or polymorphic;...

Tripoli {P}

A term often used to describe diatomite, but originally used only for diatomite from Tripoli in North Africa.

Example:

H.M.S. Challenger - Report on the Diatomaceae
(*Coscinodiscus*)

...having first directed the attention of naturalists, geologists, and microscopists to the so-called Infusorial Earths, tripoli and other ...

Triundulate {G}

In combination. Latin. tri - three. Latin. undosus - full of waves, billowy.

Three waves or undulations on a valve side, margin or top.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
(*Navicula Iridis* var. *undulata*)

Differs from var. *amphirhynchus* in its margins, being triundulate.

Trophic {O}{E}

Greek. trophe - food.

Relating to nutrition; a trophic level is the position of an organism in a food chain or food (trophic) pyramid

Example:

Trophic level {P}

Greek. trophe - food.

Literally feeding level, in a food web or chain, eg primary producer, primary consumer (herbivore), secondary consumer (carnivore 1), tertiary consumer (carnivore 2), and so forth. Organisms are assigned to the highest trophic level at which they are currently functioning but such assignment is normally ontogenetically variable in the case of consumers.

Example:

Tropics {H}{O}

Either of two parallels of latitude 23°27' north and south of the equator, being the Tropic of Cancer and the Tropic of Capricorn; also the region bounded by these latitudes.

Example:

Diatoms in Eastern Australia by Neils Foged.
(*Mastogloia baldjikiana*)

Previously recorded from the Tropics...

Trumpet Shaped{F}

French. trompette.

Flared.

Example:

New Species of Fossil or Pelagic Marine Diatoms
by J. Brun. Trans. J. W. Barker.

(*Biddulphia tubulosa*)

Processes large, prolonged into a trumpet; sometimes a little oblique...

Truncate {G}

Latin. trunco - to shorten by cutting off, cut short.

Having ends that are squared or even.

Example:

Pritchard's Infusoria (*Eunotia turgida*)

...has a semi-lanceolate lorica, truncated at the ends, and striated;...

Tubercle {F}

Latin. tuberculum - diminutive of tuber.

A nodule or swelling.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.

(*Aulacodiscus* genus)

Valves with costae, moniliform rays or well marked sulci connecting the processes or tubercles, which usually much project.

Tubiculous {H}

Latin. tubus - a pipe,

Tube-dwelling.

Example:

Tubular {P}

Latin. tubus - a pipe.

A word that may be used to describe the structure of a colony.

Example:

A Treatise on the British Freshwater Algae

by G.S. West & F.E. Fritsch.

(*Naviculoideae*)

...in some forms they are enclosed in a tough tubular mucilage envelope...

Tubule {F}

Latin. tubus - a pipe.

A small tube.

Example:

The Morphology of the Diatom Frustule

by H.G. Barber & E.Y. Haworth (*Cyclotella*)

Valve margins without spines but tubules (strutted processes) sometimes visible.

Tubuliform {F}

In combination. Latin. tubus - a pipe. Latin. forma - shape.

Having the features of a tube or bearing tubes.

Example:

New Species of Fossil or Pelagic Marine Diatoms

by J. Brun. Trans. J. W. Barker.

(*Actinoptychus flos-marina*)

...curved in an arc and with a medial tubuliform cleft.

Tumid {G}

Latin. tumeo - to swell, be bloated, swollen.

Swollen.

Example:

A Treatise on the British Freshwater Algae
by G.S. West & F.E. Fritsch.

(Cymbella)

...ventral margin slightly convex or concave and in the latter case generally tumid in the middle;...

Turbid {P}

Latin. turbidus - tumult.

Pertaining to water this is not clear, usually because it contains fine suspended particulate matter (cf nepheloid layer).

Example:

Tundra {Hy}

A vast, nearly level, treeless plain of the arctic and subarctic regions. It usually has a marshy surface which supports mosses, lichens, and low shrubs, underlain by mucky soils and permafrost.

Example:

Diatom shifts as evidence for recent Subarctic warming in a remote tundra lake, NWT, Canada (Kathleen Rühland) [2005]

Changes in diatom assemblage composition were examined from the sediments of Slipper Lake, an isolated tundra lake...

Turbidity {P}{Hy}{O}

A measure of the cloudiness of a water body due to suspended particles.

Example:

Turbidity Currents and Displaced Fresh-Water Diatoms (R. W. Kolbe) [1958]

...and ascribe the layers of these diatoms, as in core No. 234, to the action of turbidity currents...

Turbidity current {P}

Latin. turbidus - tumult.

A form of density current. A downflow of water made more dense relative to surrounding waters by suspended particulate materials. Commonly initiated on a slope by strong wave action, seismic events or slumping. Such flows may reach the deepsea and indeed are credited with creating the peneplain-like abyssal topography of the western North Atlantic.

Example:

Turbidity Currents and Displaced Fresh-Water Diatoms (R. W. Kolbe) [1958]

...and ascribe the layers of these diatoms, as in core No. 234, to the action of turbidity currents...

Turbulence {P}

Latin. turbulentus - a crowd.

Eddy generation by a moving fluid or by an object moving through a fluid; dissipates energy.

Example:

(1) Temporal variations among planktonic diatom assemblages in a turbulent environment of the southern Strait of Georgia, British Columbia, Canada (A. Louis) [1997]

Planktonic diatoms flourish in turbulent, nutrient-rich water (Margalef 1978), and accordingly dominate spring blooms...

(2) Swimming for survival: A role of phytoplankton motility in a stratified turbulent environment (O. N. Ross) [2008]

...thought to be a key aspect of diatom survival, with the generally negatively-buoyant, non-motile cells being dependent on turbulence to transfer them...

Turgescence {F}

Latin. turgere - to swell.

Swelling.

Example:

H.M.S. Challenger - Report on the Diatomaceae (Euodia ventricosa)

The specific name has reference to the turgescence of the ventral margin.

Turgid {F}

Latin. turgere - to swell.

Swollen.

Example:

Pritchard's Infusoria (Navicula trinodis)

...having a slight turgidity at the middle of one side.

Turnbuckle {F}

In combination. Old English. tyrnan. French. boucle - a ring.

A coupling with screw threads for adjusting tension.

Example:

Key to the Genera of Diatoms of the Inland Waterways of Temperate North America by W. C. Vinyard. (Frustulia)

...a very short rib less than half cell length appearing as two long turnbuckles connected by a very short rod.

Twisted {F}

Old English. twist - rope.

When the apices are twisted in different directions. As in *Surirella spiralis*.

Also refers to the twisting that occurs in chains of diatoms.

See also Torsive.

Example:

Synopsis of the British Diatomaceae by W. Smith.
(*Campylodiscus spiralis*)
Frustule twisted so as to present a spiral outline...

Tychoipelagic {H}

In combination. Greek. tyche - chance. Greek. pelagos - sea.

Occuring in the surface waters or middle-depths of the ocean only by accident. i.e. carried there by tides etc.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(Habits)

...frequently break off and become part of the plankton.
Such forms are called tychoipelagic, and may remain floating...

Tychoiplankton {H}

In combination. Greek. tyche - chance. Greek. planktos - wandering.

Organisms that have been swept into the plankton of the water column by turbulence, which do not normally inhabit that environment.

Example:

Diatom Distribution Across a Temperate Microtidal Marsh,
Mar Chiquita Coastal Lagoon, Argentina (M. A. Espinosa)
[2006]

They pointed out that plankton and tychoiplankton diatoms are allochthonous components in coastal deposits of Netherlands.

Type-form {P}

Greek. typos - model. plus Latin. forma - shape.

This normally refers to the species from which the variety or form is derived.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
(*Asterionella formose* v. *gracillima*)

Valves much narrower than in the type-form.

U

Ubiquitous {P}

Latin. ubique - everywhere.

Found everywhere.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(*Coscinodiscus radiatus*)

Distribution - Ubiquitous.

Ultraplankton {O}

Plankton that are smaller than nanoplankton; they are difficult to separate from water

Example:

Structural and physiological observations on some small marine diatoms (P. E. Hargraves) [1974]

Ultraplankton diatoms have been studied relatively little, though some species may be of wider distribution.

Ultrastructure (Fine Structure) {F}{E}

Those structural details of an organism visible only to an electron microscope.

Example:

Ulvaceous

Example:

Report on the Diatomaceae collected by H.M.S. Challenger. Botany Volume II (Conte Abate Francesco Castracane Degli Antelminelli) [1886]

The substance which exists in the form of a definite frond resembling a higher alga, being either ramified, ulvaceous, tubular, saccate, or mucilaginous and amorphous,...

Umbilicate {F}

Latin. umbilicus - the navel.

Bearing a small depression.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.

(Graya genus)

Centre umbilicate, often surrounded with a small area...

Umbilicus {F}

Latin. umbilicus - the navel.

A small depression.

Example:

Simbirsk Diatoms by Otto N. Witt

(Gyrodiscus vortex)

In the centre is found the circular umbilicus from which a great number of S-shaped bent radii seem to form...

Umbonate {F}

Latin. umbo.

Having a central boss.

Example:

H.M.S. Challenger - Report on the Diatomaceae

(Actinocyclus umbronatus)

This beautiful discoid umbonate Diatom...

Unarmed {F}

In combination. Old English. prefix un - not. Latin. arma - equipment.

Being without ornamentation, particularly spines, hooks and other protruberances.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.

(Leptocylindrus genus)

Valves flat, unarmed.

Undercurrent {Hy}{O}

A current below the upper currents or surface of a fluid body. In oceanography, a water

current flowing beneath a surface current at a different speed or in a different direction.

Example:

Tectonic processes in Papua New Guinea and past productivity in the eastern equatorial Pacific Ocean (M. L. Wells) [1999]

...increases in the iron concentration in source waters of the upwelling Equatorial Undercurrent are needed to fuel intense diatom production.

Undulat(e)(ion) {G}

Latin. undosus - full of waves, billowy.

Having a wavy outline.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.

(Cymatopleura Solea)

Girdle face very narrow, and showing a large number of undulations, sometimes opposite, sometimes alternate.

Unicellular {P}

In combination. Latin. unus - one. Latin. cella.

Of or having one cell. Also meaning solitary in the context of organisation.

Example:

Algae and Fungi by C. J. Alexopoulos & H. C. Bold.

Diatoms are unicellular, colonial, or filamentous...

Uniflagellate {P}

In combination. Latin. unus - one. Latin. flagrum - a whip.

Bearing a single flagellum (a whip like accessory associated with movement).

Example:

The Algae - A review by G. W. Prescott.

...genera such as Biddulphia form uniflagellate microspores;...

Uniform {F}

In combination. Latin. unus - one. Latin. forma - form.

Alike all over. Patterning the same over the surface of the valve.

Example:

Diatoms from Russian Deposits by J.W. Barker & S.H.

Meakin.

(Aulacodiscus singilewskyanus)

...the surface marking are more transparent and uniform.

Unilateral(ly) {F}

In combination. Latin. uni. - having one. Latin. lateris - side.

On one side only.

Example:

The Diatomaceae of Philadelphia and Vicinity by C.S. Boyer.

(Gomphonema montanum)

...widened in the middle unilaterally...

Uniseriate {F}

In combination. Latin. uni. - having one. Latin. series - a row, succession, chain.

Having a single row of pores, punctae, spots or dots.

Example:

Key to the Genera of Diatoms of the Inland Waterways of Temperate North America by W. C. Vinyard.

(Cymbella)

Cells uniseriate in gelatinous tubes.

United {F}

Latin unio - one.

Joined together.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.

(Thalassiosira Nordenskioldii)

Cells short, united into close, long chains...

Univalved {F}

In combination. Latin. unus. - having one. Latin. valvae - leaves or folds.

Having only a single valve.

Example:

Pritchard's Infusoria

(Odontella)

...having a simple univalved compressed lorica,...

Unstriate {F}

In combination. Old English. prefix un - not. Latin. stria - a furrow, groove or channel.

Not forming striae or lines.

Example:

Report on the Irish Diatomaceae by E. O'Meara.

(Cyclotella Kutzingiana)

...the central portion of the valve unstriate.

Unsymmetrical {G}

In combination. Old English. prefix un - not. Greek. symmetria - together.

See Asymmetrical.

Example:

On Some Undescribed Species of Diatomaceae

by George Norman.

(Astrolampra stella)

The unsymmetrical appearance may be...

Upper Valve {F}

Old English. up. Latin. valvae - leaves or folds.

The larger (older) valve.

Example:

Freshwater Life by John Clegg

(Illustration)

also The Diatomaceae of Philadelphia and Vicinity by C.S.

Boyer.

(Cocconeis dirupta)

...the upper valve similar to the lower valve except in the absence of raphe and nodules.

Upper water masses {H}

Principal tropical and subtropical water masses lying below the main thermocline and

above intermediate water, typically between depths of 200 - 800 m.

Example:

Studies on Organic Production- I. Gulf of Manner (R. Prasad) [1963]

...especially the plankton algae found in the upper water masses...

Upwelling {P}{E}{O}

Wind-driven upward movement of subsurface waters caused by displacement of surface waters by prevailing winds and Ekman surface drift (cf Ekman layer).

Upwelling is an important source of nutrient replenishment in tropical and subtropical waters where it occurs (eg in eastern boundary current regions, equatorial divergence zones, in association with monsoonal wind fields, etc.) (cf coastal upwelling).

Example:

Peruvian coastal upwelling: Late Quaternary productivity changes revealed by diatoms (H. Schrader) [1991]

Typical upwelling diatoms are generally small and fragile.

Utricle {F}

Latin. utriculus - a small bag.

A small bag or bladder.

Example:

Synopsis of the British Diatomaceae by W. Smith.
(Introduction)

...dissolves the utricle and its contained endochrome.

V

v. var.

Latin. varietas - various.

An abbreviation of Variety.

Example:

Vacuole {P}

Latin. vacuus - empty, clear, free from, devoid of.

A cavity within the cytoplasm that has a distinct membrane and is usually filled with fluid.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(General Morphology)

...usually contains large clear spaces, the vacuoles which are full of sap.

Vadal {H}

Floating close to shore.

Example:

Valval View {F}

Latin. valvae - leaves or folds. plus French. vue - see.

See Views. See also Valve View.

Example:

Notes on Diatoms by F.B. Taylor
201 - ...the valval view of Van Heurck and Castracane...

Valvar Plane {G}

Latin. valvae - leaves or folds. plus planus - level flat.

An axial plane perpendicular to the perivalvar plane.

Example:

Littoral Diatoms of Chichester Harbour

by N. Ingram Hendey.

...as that of the valvar plane, at right angles to the principal axis.

Valve {F}

Latin. valvae - leaves or folds.

One of the pair of components that make up the pill-box frustule. See Hypovalve and Epivalve.

Example:

On New Forms of Marine Diatomaceae by W. Gregory.

(Amphora laevis)

...rising from the inner angle of the valve, and following the margin outwards...

Valve Face {F}

Latin. valvae - leaves or folds.

The broad, usually relatively flat expanse of silica surrounded by the mantle (side) Also termed Valvar Face.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.

(Dactyliosolen genus)

Cells cylindrical, living singly or united in chains by the flat valve-faces.

Valve Jacket {H}

Latin. valvae - leaves or folds. plus Old French. jaquet.

The side of the valve (not including girdle bands etc.)

Example:

The Algae - A review by G. W. Prescott.

...curved (bent) into a marginal flange, often referred to as the valve jacket.

Valve Mantle {F}

Latin. valvae - leaves or folds. plus mantel(l)um - A cloak or mantle.

The portion of the valve that is evident when viewing a valve from the side.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.

(Chaetoceros genus)

Valve consisting of a more or less flat end surface (the valve surface) and a cylindrical part (the valve mantle), which are bound together without a seam.

Valve Margin {F}

Latin. valvae - leaves or folds. plus margino - to furnish with a border.

The very edge of the valve where it meets the cingulum.

Example:

The Planktonic Diatoms of Northern Seas by M.V. Lebour.
(Chaetoceros holsaticus)
Bristles short, springing from the inside of the valve margin.

Valve Side {F}

Latin. valvae - leaves or folds. plus Old English. side.

This refers to the valve view and is yet another example of variation in the use of view terms.

Example:

Freshwater Biology by Ward & Whipple.

(Key - Diatoma)

Valve side oval or linear...

Valve Surface {F}

Latin. valvae - leaves or folds. plus In combination. Latin. super. Latin. face.

See Surface.

Example:

Diatoms of British Coastal Plankton by J. B. Sykes.

The valve surface may have one or more spines or mucilage threads issuing from it.

Valve View {M}

Latin. valvae - leaves or folds. plus French. vue - see.

The view of the valve when seen from above (or below)

See also Views.

Example:

Diatoms of British Coastal Plankton by J. B. Sykes.

...rectangular in girdle view; very narrow in valve view, without spines.

Valvocopula {F}

In combination. Latin. valvae - leaves or folds. Lain. copula - a band, thong or tie.

A portion of the cingulum valve interface.

Example:

Cingulum Morphology of the Marine Diatom Dimeregramma fulvum (A. Prasad) [1988]

The first band, the valvocopula, underlaps the valve mantle. The three bands differ in the distribution of poroids.

Varietal Significance {P}

Latin. varietas - various. plus In combination. Latin. signum - a sign. Latin. facere - to make.

Pertaining to variation in a species that is not great enough or consistent enough to warrant the creation of a new species and would thus be termed a variety.

Example:

H.M.S. Challenger - Report on the Diatomaceae

(Rhizosolenia var. nov.)

...these points of difference cannot be regarded as possessing more than a varietal significance.

Varve {E}

A sequence of sediments deposited annually in glacial lakes. Also a thin deposit of sediment in the bottom of a lake.

Example:

Veining {F}

French. veine.

Linear markings upon the surface of the valve.

Example:

H.M.S. Challenger - Report on the Diatomaceae.

(*Biddulphia ornata*)

the evident granulation, and the reticulate linear veining.

Vela, Velum {F}

Latin. velum - a veil.

A veil or perforated membrane.

Example:

The Morphology of the Diatom Frustule

by H.G. Barber & E.Y. Haworth

...a perforated grid known as a velum can occasionally be detected...

Venter {F}

Latin. venter.

See Ventral Margin.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.

(*Amphora turgida*)

Valves with dorsum very convex, venter flat,...

Ventral (margin)(side)(surface) {F}

Latin. ventriculus - the belly.

Usually the margin closest to the apical axis being the less convex margin of a dorsiventral valve.

Example:

Pritchard's Infusoria (*Navicula lineolata*)

It is compressed on the ventral surface, and convex on the back.

Ventricose {F}

Latin. ventriculus.

Swollen in the middle, at one side or at the base.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.

(*Cymbella affinis*)

Short, ventricose; valves broadly lanceolate,...

Vermiculate {F}

Latin. vermis - a worm.

See Vermiform.

Example:

Vermiform {F}{G}

Latin. vermis - a worm.

Having the form of a worm. Sometimes used to describe the shape of hyaline structures or 'holes'.

Example:

Marine Diatoms of the Philippine Islands by A. Mann
(*Nitzschia bisculpta*)

...the half on the ventral side of this line is further marked by a prominent overlay of short, more or less vermiform shining dashes;...

Vernal {P}

Latin. vernare - to spring.

Happening or appearing in spring.

Example:

Freshwater Algae -their Microscopic World Explored
by H. Canter-Lund & J.W.G. Lund

pg19 - ...they can be the inoculum for the next year's vernal (spring) algal maximum.

Vernal pool {Hy}

A small lake or pond that is filled with water for only a short time during the spring.

Example:

The occurrence of Anostracans – Fairy shrimps *Branchipus schaefferi* in vernal pools of Bahrain (H. Al-Sayed) [2005]
The flora of the vernal pool includes bacteria, diatoms, green algae and cyanobacteria.

Vertices {F}

Latin. vertex - summit, vertere - to turn

Plural of vertex - meaning the crown or head, the point opposite the base, and also the meeting point of the lines bounding an angle.

Example:

H.M.S. Challenger - Report on the Diatomaceae
(*Asteromphallus challengeriensis*)

The vertices of the segments are obtusely rounded,...

Vesicles {P}

For example Silica deposition vesicles.

Vesiculate {F}

Latin. vesica - a bladder or blister.

Bearing vesica (bladder or blister like features) or likened to a vesica.

Usually used to describe features on a frustule rather than the cell within.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(*Dictyonopsis* genus)

...the interior with cells broader, vesiculate, giving a reticulate appearance...

Vestige {F}

Latin. vestigium - a footprint.

Used to describe a reduced, almost insignificant feature.

Example:

A Treatise on the Diatomaceae by Henri Van Heurck.
(*Nitzschia circumscuta*)
...showing between them a vestige of a nodule.

Views {F}

Determining which view is being discussed is, unfortunately, fraught with problems. Most modern texts discuss Valve View (valve face next to observer) and Girdle View (girdle band or girdle margin next to observer) which are relatively easy to comprehend. However, a number of 'view' definitions existed in earlier treatises often using the same term but actually meaning the opposite view to the one a modern diatomist might expect.

The following list may be found useful.

Ehrenberg used Lateral Surface for Girdle View and Dorsum & Venter for Valve View.

Kützing used Primary Side for Girdle View and Secondary Side for Valve View.

Rabenhorst used Secondary Side for Girdle View and Primary Side for Valve View.

Ralfs, W. Smith, Pritchard and other British diatomists used the term Front View for Girdle View and Side View for Valve View.

Zonal (Zone) view was used by many to describe the Girdle View.

Valval View was used by many to describe the Valve View.

Shield View was used by Otto N. Witt to describe valve View.

Belt View was used by Otto N. Witt to describe Girdle View.

The following terms have also been used to describe which surface was being observed.

Valvular Face - looking at the valve face.

Side View has also been used to refer to the valve face.

Frontal Face - looking at the girdles.

Front View also looking at the girdles.

Principal Face - looking at the girdles.

In West & Fritsch the term 'cross-section' is sometimes used to denote valve view.

In *Conspectus of the Families and Genera of the Diatomaceae* - The lens, the term

Front View relates to the view when the girdle is facing the observer. The term Side View relates to the situation where the valve face is facing the observer.

It cannot be stressed too much that the reader should familiarise themselves with the publication in question before jumping to the wrong conclusions.

Vigorous {F}

Latin. vigor - to be strong.

Strong, bold.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(*Navicula palpebralis*)
Striae vigorous, about 10 in 1 c.d.m.

Virgae (pl.), Virga (sing.) {F}

Latin. virga - a twig, sprout, switch, or rod.

The hyaline area between two striae. See also Interstria.

Example:

Vittae (Vittated) {F}

Latin.

False partitions. Prolongations from the margins of the connecting zone towards the interior. As in *Grammatophora*.

Example:

A Treatise on the Diatomaceae by Henri van Heurck.
(*Diatomella* genus)

Frustules quadrangular, showing only two false septa (vittae), straight and pierced...

Voigt Fault {F}

See example for explanation.

Example:

The Morphology of the Diatom Frustule
by H.G. Barber & E.Y. Haworth

Voigt Fault (an abrupt change in direction or length of striae that occurs on one side of the valve only).

Volute {P}

Latin. volutum - to roll.

A spiral scroll as in the capital of a column. Sometimes used just to describe a spiral form.

Example:

Pritchard's Infusoria (*Meridion* genus)

...the mode of aggregating during self-division, which in the form of a volute or spiral, occasioned by one end being broader than the other.

W

Wand {F}

Old Norse. vandr - a shoot of a tree.

Something slender and supple.

Example:

Pritchard's Infusoria
(*Meridion*)

...single wands of both these species are difficult to distinguish from...

Wanting {F}

Old Norse. vant - to lack.

A word used to describe the absence of something.

Example:

Diatoms from the West Indian Archipelago
by P.T. Cleve.

(*Navicula formicina*)

Striae parallel, not reaching the median line and wanting in the middle of the valve.

Warm-water species {H}

Species occurring in the open ocean between the subtropical convergences (ca 40° N to 40° S).

Example:

Warmwater cosmopolitan {P}

A species very broadly distributed in the warmwater ocean ie that fraction of the global oceanic environment between (about) 40° N and 40° S.

Example:

Wasteway {Hy}

A waterway used to drain excess irrigation water dumped from the irrigation delivery system.

Example:

Water column {Hy}

An imaginary column extending through a water body from its floor to its surface.

Example:

The Effects of River Floodwaters on Floodplain Wetland Water Quality and Diatom Assemblages (C. L. Weilhoefer) [2008]

Wetland and river water column diatom assemblages were dominated by periphytic taxa.

Water mass {P}

Here meant as principal water mass defined by a near constant and predictable envelope of temperature and salinity relationships (cf T-S curve, T-S envelope). Water mass properties imply a restricted locality or zone of origin, typically at or near the surface, at high latitude, in winter.

Example:

Water pollution {P}

Any detrimental changes in water quality (temperature, chemical composition, etc) usually due to human activities.

Example:

Assessment of Water Pollution using Diatom Community Structure and Species Distribution – A Case Study in a Tropical River Basin (I. S. A. Khan) [1990]

A study on biological assessment of water pollution using diatom community structure and species distribution was carried out in the Linggi River Basin,...

Water-mass boundary {P}

The (typically) ecotonal zone separating core regions underlain by the principal upper water masses (qv). The water mass boundary may affect the distribution of organisms, and does not extend to the surface of the ocean, although the vertical distribution of the organism may do so.

Example:

Water-mass hypothesis {P}

The concept that distributional boundaries of pelagic species and pelagic species assemblages are caused by ocean circulation, and associated with water mass boundaries. The cyclonic and anti-cyclonic gyres and boundary currents then form different biological provinces with climatic differences and different sets of nutrient and temperature characteristics .

Example:

Water-mass region {P}

A sea surface plot of the area underlain by the core (typical and diagnostic T-S envelope and other features) of one of the principal upper water masses.

Example:

Watercourse {Hy}

Any surface flow such as a river, stream, or tributary.

Example:

Comparative monitoring by means of diatoms, macroinvertebrates and chemical parameters of an Apennine watercourse of central Italy: The river Tenna (M. Torrisi) [2010]

The biological quality worsens in the final section of the watercourse, as revealed by the diatoms,...

Watershed {Hy}{E}

Land area from which water drains toward a common watercourse in a natural basin.

Example:

A Paleolimnological Record from Lake George, New York (B. Wiltse) [2010]

Major development in the watershed as a whole began during the late 19th century, but it appears that the diatom community did not respond...

Wave refraction {O}

Wave refraction is the process by which wave crests are bent according to variations in seabed contours. This is because as a wave enters shallow water its speed becomes a function of water depth, which causes a change in wave direction in differing water depths.

Example:

Wedge-shaped {F}

Old English. wecg. plus Old Norse. skapa.

Shaped like a wedge.

Example:

Diatoms of British Coastal Plankton by J. B. Sykes. Cells wedge-shaped in girdle view, joined only by their processes...

Weir {Hy}{E}

(a) A low dam built across a stream to raise the upstream water level (fixed-crest weir when uncontrolled); (b) A structure built across a stream or channel for the purpose of measuring flow (measuring or gaging weir); (c) A structure built into a levee or river bank that allows water to flow from the main river channel into a bypass channel during time of high flows.

Example:

Transitions Between Aulacoseira and Anabaena Dominance in a Turbid River Weir Pool (B. S. Sherman) [1998]
...between the diatoms Aulacoseira spp. (Melosira) and the cyanobacteria Anabaena spp. as dominant phytoplankton species in a turbid-river weir pool

Wetlands {Hy}{E}

Ecosystems whose soil is saturated for long periods seasonally or continuously, including marshes, swamps, and ephemeral ponds.

Example:

Diatoms as indicators of environmental change in wetlands and peatlands (E. Gaiser) [2010]

Diatoms serve as both engineers and barometers in wetlands and peatlands.

Whorl {P}

Middle English. wharwyl.

Making a turn about a central axis.

Example:

Portfolio of Drawings etc. by Thomas Bolton.

(*Asterionella formosa*)

...but appear to form a helix and often are continued on for a second whorl making about...

Willow carr {Hy}

A pool, or wetland dominated by willow trees or shrubs.

Example:

Window {F}

A term sometimes used for an aperture, opening, foramen or intercellular space.

Example:

Rines, J.E.B. & P.E. Hargraves - The Chaetoceros -
Bibliotheca Phycologica (79)

Wing {F}

Old Norse. vaengr - a wing.

A long thin projection of silica along the apical axis, sometimes enclosing a canal raphe.

Example:

H.M.S. Challenger - Report on the Diatomaceae (*Amphiprora* genus)

...owing to a central constriction resulting from the bilobate form of the wings.

Wing Canal {F}

Old Norse. vaengr - a wing. plus Latin. canalis - a water pipe.

Example:

New and Rare Diatoms from Oregon and Washington
by H. E. Sovereign.

(*Stenopterobia intermediate form undulata*)

...more commonly specimens will have wing canals spaced from 2.5 to 3 in 10 microns...

Wing Projections {F}

Old Norse. vaengr - a wing. plus In combination. Latin. pro - forth. Latin. jacere - to throw.

Example:

New and Rare Diatoms from Oregon and Washington

by H. E. Sovereign.

(*Surirella parma*) Wings well developed, wing projections plain.

X

Xanthophyll {P}

In combination. Greek. xanthos - yellow. Greek. phyllon - leaf.

A carotene based brown or yellow pigment that absorbs wavelengths of light for which chlorophyll is ineffective. This series of pigments is nearly always found in diatoms.

Example:

Treatise on the Diatomaceae by Henri van Heurck.

(History of Diatoms)

...consists of the yellow xanthophyll of Sorby...

Xanthoplast {P}

In combination. Greek. xanthos - yellow. Greek. plastos - moulded.

A name given to Chloroplasts that also contain Xanthophylls as well as Chlorophylls.

Example:

The Invertebrata (L. A. Borradaile) [1932]

The green chromatophores are known as chloroplasts, the yellow as xanthoplasts.

Z

Zig-Zag {P}{F}

French. zigzag.

Having short, sharp, alternate turns. Bending from side to side.

Example:

Pritchard's Infusoria

(Bacillaria)

...they form gaping or zig-zag chains...

Zone {F}

Greek. zone - a girdle.

This word used alone (only seen in The Diatomaceae of Philadelphia and Vicinity) refers to the girdles and the sides to which they attach. It is also used to refer to an area surrounding another feature.

Example:

The Diatomaceae of Philadelphia and Vicinity

by C.S. Boyer.

(*Biddulphia favus*)

Zone punctate in quincunx, never found open.

Zonal {P}{O}

Latin. zona - a girdle.

Term used to describe objects or events mainly in a longitudinal (east-west) direction, eg the zonal flow of the equatorial currents and countercurrents (cf meridional).

Example:

Distribution and Ecology of British Marine Littoral Diatoms (A. A. Aleem) [1950]

Their object has been to throw light on the zonal distribution and the representation in different seasons of such diatoms...

Zonal View, Zone View {F}

Greek. zone - a girdle. plus. French. vue - see.

See Views.

Example:

The Diatomaceae of Philadelphia and Vicinity by C.S. Boyer.

(*Cyclotella* genus)

Frustules single or geminate, cylindrical, short, in zone view rectangular...

Zonation {P}{O}

Latin. zona - a girdle.

Parallel bands of distinctive plant and animal associations found within the littoral zones and distributed to take advantage of optimal conditions for survival

Example:

Diatom Zonation in Southern Oregon Tidal Marshes Relative to Vascular Plants, Foraminifera, and Sea Level (A. R. Nelson) [1993]

The zonation of modern diatom assemblages suggests that fossil diatom assemblages, particularly those of the high marsh and marsh border subzone...

Zygospore {P}

In combination. Greek. zygon - a yoke. Greek. sporos - a seed.

A spore produced by conjugation.

Example:

A Treatise on the British Freshwater Algae by G.S. West & F.E. Fritsch.

This process recalls the formation of double zygospores in some Conjugatae, although the cytological details are different.

Zygote {P}

Greek. zygosos - yoked.

The product of the union of two gametes.

See Auxospore. See Gamete.

Example:

Algae and Fungi by C. J. Alexopoulos & H. C. Bold.

The zygotes of diatoms are called auxospores...

Zygomorphous {P}

In combination. Greek. zygoisis - a yoke. Greek. morphe - form.

Yoke shaped.

Example:

A Treatise on the British Freshwater Algae by G.S. West & F.E. Fritsch.

(*Meridionaceae*)

The frustules are elongate and cuneate in both valve- and girdle views and are therefore zygomorphic, being symmetrical only in relation to the longitudinal axis.

Appendix

Listing of terms by Category