THE ETYFISH PROJECT
FISH NAME ETYMOLOGY DATABASE

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The means for ascertaining or confirming the etymologies of many scientific names are, perhaps, not available for all who might desire to ascertain them, and they are often wrongly analyzed. — Theodore Gill (1896)

INTRODUCTION

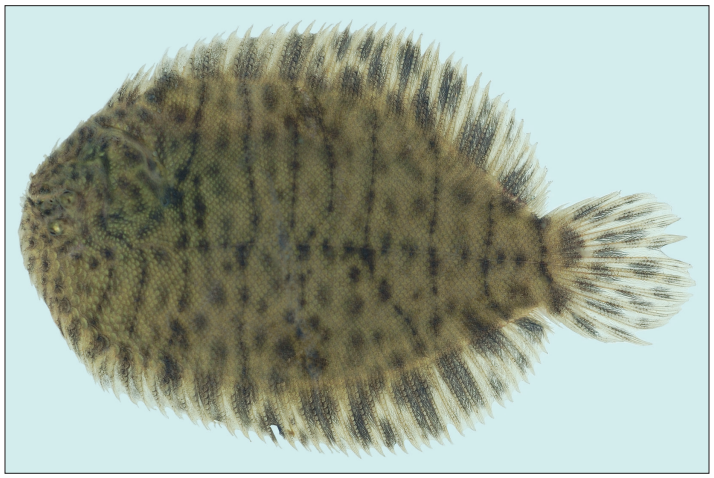
Naturalists have been naming animals with Latin or latinized epithets long before Linnaeus formalized zoological nomenclature with his *Systema Naturae* (10th ed.) in 1758. Following Linnaeus' binomial (genus and species) system, over 10,000 genus-group names and over 57,700 species-group names have been proposed for fishes, with over 5,000 and 32,900 of these names, respectively, regarded as taxonomically valid today. But as Smithsonian zoologist Theodore Gill remarked back in 1896, the precise meanings of many scientific names are poorly known, and a reference for looking them up, at least among fishes, has long been unavailable. *The ETYFish Project* (www.etyfish.org) attempts to fill these voids.

WHAT DOES THAT NAME MEAN?

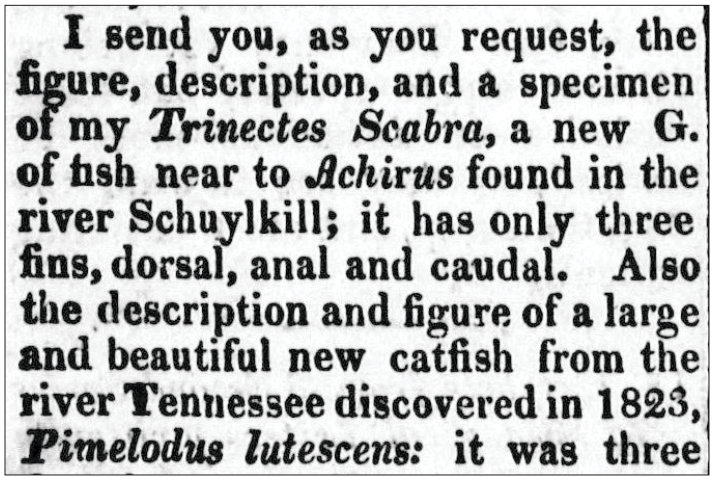
Our objectives are twofold: (1) to provide an English translation of a fish's generic and specific names and (2) to explain how the name applies to the fish in question. Many references accomplish the first objective but fall short with the second. A case in point: *Trinectes* is a genus of coastal North and South American flatfishes whose name was coined by Rafinesque in 1832. Numerous books and websites will tell you that *Trinectes* is a combination of *tri-*, meaning three, and *nektes*, meaning swimmer. What most references fail to explain is what "three swimmer" actually means. (Does the fish swim in groups of three?)

The answer lies in Rafinesque's one-sentence description: "… it has only three fins, dorsal, anal and caudal." Clearly, Rafinesque referred to the fact that the specimen he examined (now known as *T. maculatus*) lacked pectoral fins (a characteristic of the species) and, hence, had only three fins with which to swim. It's this kind of analysis we believe makes *The ETYFish Project* a unique and useful reference for anyone who studies or writes about fishes or is curious about the combination of biology and language that zoological nomenclature represents.

In some cases, available etymological explanations are incorrect. Here is one example from among dozens. In the 1992 monograph *The Characin Fishes of the Apure River Drainage, Venezuela*, it is stated that the etymology of the specific name of *Moenkhausia chrysargyrea* (Günther 1864) is derived from the Latin words *chrysos*, meaning gold, and *gyrus*, meaning circle (p. 266). But the author is unable to explain how this translation of the name applies: "While there



Hogchoker *(Trinectes maculatus),* Cape Fear River, North Carolina. (Photo by Fritz Rohde)



I send you, as you request, the figure, description, and a specimen of my *Trinectes Scabra*, a new G. of fish near to *Achirus* found in the river Schuylkill; it has only three fins, dorsal, anal and caudal. Also the description and figure of a large and beautiful new catfish from the river Tennessee discovered in 1823, *Pimelodus lutescens:* it was three

The clue that unlocks Rafinesque's *Trinectes* (from his *Atlantic Journal, and Friend of Knowledge (...),* 1833).

***Moenkhausia chrysargyrea*. (Photo by Erling Holm)**

is no golden circle in preserved material, I suspect that the pale halo around the first humeral spot is probably golden in life." Unfortunately, the translation is not correct. While *chrysos* does indeed mean gold, the second half of the name is from the Latin *argyrea*, meaning silvery. Günther, who did not explain the meaning of the name in his original description, did however describe the color of the fish as silvery with "golden reflexions." Based on this evidence, *chrysargyrea* almost certainly means "golden-silver" and not "gold circle." Misinterpretations such as this are common in the scientific and popular literature, and are often picked up and perpetuated in subsequent publications and databases (e.g., Fishbase).

METHODOLOGY

Most modern-day descriptions of new fish taxa include a section on etymology in which the meaning of the name is unambiguously explained. Most descriptions from the 18th, 19th, and early-20th centuries do not. When the derivation and/or meaning of a name is not explained by the author(s), such as in the *Trinectes* and *Moenkhausia* examples cited above, we attempt to match our translation of the name—aided by Brown's *Composition of Scientific Words* (rev. ed., 1956)—with an attribute mentioned in the original description. If that approach does not yield an obvious interpretation of the name, then we attempt to match the name with characters about the taxon as reported in subsequent publications. If we are not 100% certain about our interpretation, we include the adverb "probably," "presumably," or "possibly" in our explanation. Despite our best efforts, many names have meanings that remain enigmatic (e.g., the temperate bass genus *Morone*) while others have names that reflect the whims of the author and apparently have no meaning at all. For example, Girard (1856) named several minnow genera after Native American words (e.g., *Agosia*, *Dionda*, *Nocomis*) simply because he liked the sound of them. If you know the meanings of any of these enigmatic names or can point us in new research directions, please contact us: chris@etyfish.org.

TAXONOMIC COVERAGE AND CLASSIFICATION

The ETYFish Project aims to explain the derivation and meaning of the names of every valid genus, subgenus, species and subspecies of fish and fish-like craniate (excluding fossils). This paraphyletic assemblage includes Myxini (hagfishes), Petromyzontida (lampreys), Chondrichthyes (sharks, rays, and chimaeras), Actinopterygii (ray-finned fishes) and Sarcopterygii (coelacanths and lungfishes). Classification of higher-level taxa (subfamily and above) generally follows Eschmeyer's online Catalog of Fishes database (http://research.calacademy.org/ichthyology/catalog) and Nelson's *Fishes of the World* (4th ed., 2006; http://members.shaw.ca/fishesoftheworld). We occasionally depart from their classifications (e.g., subfamilies in the hyperdiverse minnow family Cyprinidae) when we feel that current research presents a compelling case that we should. We provide name etymologies for all genus- and species-level taxa labeled as "valid" in the Catalog of Fishes; occasionally we add or subtract taxa when we feel that current research, or research not yet cited in the Catalog, justifies otherwise. We include subgenera and subspecies when our review of the literature indicates that these taxa remain in use by some ichthyologists. Gender is not included in our etymologies; please consult the Catalog of Fishes for information on whether a name is masculine or feminine.

A DYNAMIC REFERENCE

New taxa will be added as soon as we learn of their publications. Names will be removed if they are sunken into synon-

Most of the new genera which I propose have been designated by words taken from the North American Indians, as being more euphonic than any one I might have framed from the Greek. The classic literature has already furnished so many names that there are but few instances in which a name might yet be coined and express what it is intended to represent. I offered this remark as a mere statement; not as an apology.

Girard's explanation of his use of words borrowed from Native American languages in naming new genera (*Proceedings of the Academy of Natural Sciences of Philadelphia,* Vol. 8, 1856).

ymy. Familial and generic classifications and specific placements within them will be adjusted as revisionary studies are published. Etymologies will be revised should new information become available. Revision information is included near the beginning of every section. Revisions marked by numbers (rev. 2, rev. 3, etc.) indicate when the content in that section has been expanded or updated (i.e., adding new taxa, correcting authorship dates, revising an etymology). Revision numbers marked by lowercase letters (rev. 2a, rev. 3b, etc.) indicate that typos and other minor errors have been corrected. If we overlooked a valid taxon or included one we shouldn't have, or if see anything you believe is incorrect or could be improved upon, please let us know by emailing chris@etyfish.org. *You are our peer review.*

WHEN WILL IT BE FINISHED?

The ETYFish Project is not supported by any museum or educational institution. We work on it as a labor of love, as our schedules and budgets permit. Progress to date (Myxiniformes through Characiformes) represents five years of research and data entry. That's approximately 2100 names a year. Progress would be much slower—indeed, a project of this magnitude would be a practical impossibility—were it not for Google and Google Translate, the Catalog of Fishes, and the increasing digitization of old scientific journals and books via the Biodiversity Heritage Library (http://www.biodiversitylibrary.org/) and other electronic archives. We still need to "hit the stacks" for many references, but it's amazing how much research can be done, and how quickly, without leaving our desks. Our work follows the sequence of fish classification adopted by most ichthyologists, so catfishes (Siluriformes, >4000 names) is what we're working on now. At the current rate, we expect to be finished in 2027.

ACKNOWLEDGMENTS

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HEADSCRATCHERS

Few biologists have confounded our efforts to provide a precise meaning for every fish species and genus name more than the American ichthyologist-herpetologist-paleontologist Edward Drinker Cope (1840–1897). He was a prolific taxonomist, discovering, describing, and naming more than 1,000 vertebrate species, including hundreds of fishes and dozens of dinosaurs. But many of these names (at least among fishes) remain enigmatic. Was he too busy cranking out papers (over 1400 of them) to provide etymologies and explain his name selections? Or did he take a perverse delight in coining names with elusive meanings known only to him? Whatever the explanation, whenever we research a Cope name we know we stand a very good chance of submitting "allusion not evident" as our final answer.

Following are a few "Cope headscratchers," presented in the hope that you may be able to find meaning where we found none.

COPE HEADSCRATCHER #1: *GILA PANDORA*

The Rio Grande Chub, a minnow of the Rio Grande and Pecos River systems of Colorado, New Mexico, and Texas, was described by Cope as *Clinostomus pandora* in 1872. The type locality was Sangre de Christo Pass, a tributary of the Rio Grande, in Costilla County, Colorado, in the middle of the state near its southern border. It was one of many vertebrates he described during his work as a prospector with the United States Geological Survey.

In Greek mythology, Pandora (derived from *pan*, all, and *doron*, gift, meaning all-endowed or all-giving) was the first female human created by the deities. These deities gave her unique gifts (such as the secret of fire). But instead of sharing these gifts, Pandora opened a jar (mistranslated

***Gila pandora,* Rio Arriba, New Mexico. (Photo by Dave Neely)**

as a box), which released plagues and other evils upon humanity, leaving only hope inside once she closed it again. Today the phrase "to open Pandora's box" means to perform an action that may seem small or innocent but turns out to have severe and far-reaching consequences

What does any of this have to do with a dusky, chub-shaped minnow of the American West? Your guess is as good as ours. It's possible that Cope elaborated on the name in a later publication, but none that we've seen so far.

We thought we were on to something when we found that there was a Pandora mine and subsequent mining town (circa 1875) just east of Telluride, Colorado. But that's 140 miles away from the type locality. Was there another Pandora mine closer to where Cope discovered this minnow?

When discussing the name with Mark Sabaj Pérez, Collections Manager of the Ichthyology Department at the Academy of Natural Sciences of Drexel University, he offered an explanation that's as good as any:

Since Cope was unsure of the "truer affinities" of *Clinostomus pandora*, and mentioned several genera to which the species could belong (finally settling on *Gila* in 1875), perhaps its taxonomic ambiguity was a Pandora's box, i.e., a source of troubles for Cope and future taxonomists.

Not to mention future fish-name etymologists.

COPE HEADSCRATCHER #2: *NOTROPIS PERCOBROMUS*

In an 1871 U.S. Geological Survey report on fishes and reptiles collected in an expedition to Wyoming and "Contiguous Territories," Cope described a small minnow now known as the Carmine Shiner, *Notropis percobromus*.

As was his custom, Cope did not explain the origin of the specific name. Best we can tell, *perco-* means perch and *bromus* means grain or oats. Or perhaps the second part of the name alludes to *Bromus* Scopoli 1777, a genus of temperate forage grasses (Poaceae) that is common in North America.

At the end of his description, Cope noted that his collection of the minnow also included the centrarchid sunfish *Lepomis anagallinus* (=*L. humilis*) and the percid darter *Boleosoma brevipinne* (=*Etheostoma nigrum*), both predatory fishes. Is Cope suggesting that this small minnow served as "percoid forage"?

Another explanation is that *perco-* means hawk, perhaps suggesting that this minnow was preyed upon by some species of fish hawk. Either explanation appears to be a stretch, but they're the best we can do.

Got a better explanation? Please share.

***Notropis percobromus,* Vermilion County, Illinois. (Photo by Lance Merry)**

COPE HEADSCRATCHER #3: *LABIDESTHES SICCULUS*

The Brook Silverside, *Labidesthes sicculus*, is a common inhabitant of slow-moving rivers and lakes in North America, from the St. Lawrence and southern Great Lakes drainages to the Mississippi River basin and Gulf Coastal plains. (Despite the name, it is not specifically found in brooks.)

Cope coined the generic name in 1870 and its meaning is clear: *labidos*, forceps and *esthio*, eat, referring to its prolonged jaws, which form a short, depressed beak. The meaning of the specific name, however, is not clear.

Cope proposed the name *Chirostoma sicculum* in 1865. He provided no explanation of its etymology. Five years later, when he reassigned the species to the new genus *Labidesthes*, Cope mentioned that he captured specimens of *L. sicculus* in pools "liable to partial desiccation in the Autumn." This statement presumably led William L. Pflieger in his 1975 book *The Fishes of Missouri* to surmise that the name *sicculus* was derived from *siccus*, meaning dry or desiccated, and refers to Cope having found his specimens in dried ponds. This claim was repeated in later editions of the book, and has been picked up by other "Fishes of …" books and many online references (including FishBase). We find this claim doubtful since the original type was collected in Michigan and the specimens mentioned in Cope's 1870 follow-up—presumably the ones "liable to partial desiccation"—were collected in Tennessee. Instead, we believe the name is more likely an adjectival form of *sicula*, dagger, referring to the fish's sharp snout and dagger-like shape.

Check out the photo. Does the Brook Silverside look dagger-like to you?

***Labidesthes sicculus,* Caddo River, Arkansas (Photo by Uland Thomas)**