

sol, clear transparent elastic gel, or white opaque solid curd, all at one and the same concentration and temperature. Hitherto the last two types have not been differentiated; probably all previous communications dealt with soap curd, and some confusion has been introduced into the discussion of the nature of gels on this account. Soap sol and gel have been shown to be identical in all respects except elasticity and rigidity, which are characteristic of the gel form alone. A curd is a sol or gel from which nearly all the soap has been abstracted through the formation of white curd fibres of barely microscopic diameter. These researches, described in the December issue of the *Journal of the Chemical Society*, have important bearings on the theory of gels, and support the micellar view of Nægeli.

MESSRS. J. AND A. CHURCHILL announce for early publication a new edition—the eighth—of Lee's "Microtomist's Vade-Mecum." It has been prepared by Dr. J. B. Gatenby, who has had the collaboration of several other well-known biologists; thus Prof. Bayliss contributes a chapter on the theory of dyes and staining, Dr. Da Fano has recast the chapters

on neurological methods, Dr. A. Drew has written a chapter on protozoological techniques, Dr. W. Cramer and the editor a section dealing with the fatty substances, the chapter on bone and teeth has been revised by Dr. J. T. Carter, and sections on mitochondria, Golgi apparatus, fat and yolk, chromatin, chromosomes and nucleoli, embryology, microchemical tests, colloid intra-vitam dyes, and tissue culture methods have been contributed by Dr. Gatenby.

WE have received a copy of the new edition of its catalogue of second-hand scientific instruments from the firm of Charles Baker, of 244 High Holborn, W.C.1. It is divided into twelve sections, each of which deals with a particular class of apparatus. Prominent sections are those devoted to microscopes, surveying instruments, physical apparatus of various types, and photographic material. That on microscopes contains some seventy items, ranging from single sliding-tube instruments to those carrying all the modern improvements. The firm has also a number of second-hand scientific books and periodicals for sale, including collections of various journals of microscopy and *NATURE*, vols. xxviii. to civ.

Our Astronomical Column.

APPROACHING RETURN OF PONS-WINNECKE'S COMET.—Among the periodical comets due to return this year that of Pons-Winnecke presents the most interesting possibilities. The comet will be near the earth at the time it arrives at perihelion at about the end of June or early in July next, and as its orbit lies very near that of the earth a meteoric shower seems highly probable.

The first abundant exhibition of meteors from this source appears to have taken place on June 28, 1916, when it was witnessed by Mr. W. F. Denning at Bristol, who pointed out in *NATURE* of July 27 of that year the significant resemblance of orbit between the meteors and Pons-Winnecke's comet.

The last return of the comet to perihelion occurred on September 1, 1915, and, the shower of meteors having been observed at Bristol ten months later, the stream must be fully 600,000,000 miles long. If the display should fail to be visible at the end of June next it should certainly return next year.

The radiant point is situated a few degrees north-east of the star Eta in Ursa Major, and the radiation appeared to be very diffused in June, 1916, so that it was difficult to ascertain the exact centre. In former years the comet of Pons-Winnecke was always sufficiently distant from the earth to escape contact of its materials with our atmosphere, but during the last half-century the planet Jupiter has materially disturbed its orbit, and brought that section near perihelion extremely close to the earth.

STELLAR PARALLAXES.—Yerkes Observatory Publications, vol. iv., part 3, contains parallaxes of fifty-two stars obtained photographically with the great Yerkes refractor by Mr. G. van Biesbroeck and Mr. H. S. Pettit. A yellow colour-filter was used, and the bright stars were cut down 6 mags. or thereabouts by a double rotating sector. The stars are partly fundamental ones, partly faint stars with large p.m. The following are some of the more interesting results:—Aldebaran 0.047", Castor 0.059", Procyon 0.307", B.D. +67.552° 0.106" (this is the first determination made for this star), Lalande 21185 0.382", ζ Her-

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culis 0.095", Barnard's p.m. star 0.509", and Vega 0.114". The average probable error is 0.010".

Two more Publications of the Allegheny Observatory (vol. v., Nos. 4 and 5) have been received, and contain parallaxes of eighty stars, many of them now determined for the first time. The average probable error is 0.008". There are only two parallaxes exceeding 0.1", viz. Pi II. 123 0.145" and O.A.N. 21338 0.134" (first determination). Other interesting stars are α Trianguli 0.045", δ Cephei 0.006", 54 Piscium 0.096", β Andromedæ 0.033", Furihjelms' companion to Capella 0.071" (this is easier to measure than Capella itself, and from the common p.m. the parallax must be appreciably the same), η Geminorum 0.016", Lalande 33439 0.095" (Adams and Joy found 0.087" spectroscopically), and Pi XXIII. 218 0.092".

CATALOGUE OF NOVÆ.—The Japanese *Astronomical Herald* for October, 1920, contains a very useful catalogue of novæ, giving their R.A. and decl. for 1900, the date of outburst, and other particulars. Tycho Brahe's star of 1572 is No. 1, and Mr. Denning's nova of last August No. 41. The average in the last thirty years has been just one per annum. The nova of 1885 in the Andromeda nebula and the other faint novæ recently detected in spiral nebulae have not been included in the list. The galactic co-ordinates are given, and the distribution of novæ in the four quadrants is as follows:

Galactic Long.	No. of Novæ
0° to 90°	14
90° to 180°	8
180° to 270°	3
270° to 360°	16

The deficiency in the third quadrant does not seem to be explicable as a result of south declination, for there are practically as many stars south of the equator as north of it (twenty to twenty-one). There are fourteen stars south of decl. -20° , which is the full number to be expected in this zone, one-third of the whole sphere. Hence the unsymmetrical distribution gives some grounds for conjecturing that the galaxy may be nearer to us in the first and fourth quadrants.