

new instrument evidently possesses great advantages. It has no scale attached to it, the graduation and figures being distinctly marked on the stem itself, and the shield effectually preserves them from obliteration by sea-water. The back part of the stem is enamelled white, rendering the graduation and column of mercury extremely distinct.

When the instrument is immersed in the water the descending line may be stopped or checked any number of times, and it is of course quite immaterial in what position the instrument enters the water; the illustrations show at a glance that it will infallibly assume the position "bulb downwards" when descending rapidly, and all that is needed is that care should be taken in the pulling upwards. The first pull in this direction should be quick and sudden and be continued for some little time; at the same time the pulling upwards must be continuous, since stoppages would invalidate the readings.

### UNIVERSITY AND EDUCATIONAL INTELLIGENCE

A MEETING of the members of the Yorkshire College of Science was held on Monday at Leeds. A sum of 56,000*l.* has now been promised in donations, and the endowments from the Akroyd Foundation, the Clothworkers' Company, and the bequest of the late Mr. Brown would, if capitalised, represent a further sum of about 20,000*l.* On the question of the proposed new university the committee reported that the college had held friendly communications with the authorities of Owens College, but could not at present make them the subject of a public report. Mr. Baines stated that the number of students this year was 355, as compared with 288 last year.

We have received a calendar of the Newcastle College of Physical Science, which contains full information concerning the curriculum at that institution, examination papers, scholarships, &c.

### SCIENTIFIC SERIALS

*Bulletin de l'Académie Royale de Belgique*, No. 4, 1878.—In a further paper on the scintillation of stars, M. Montigny here deals with the changes of colour in stars of red and orange tints. From a table giving the general averages of relative frequency of the seven colours in such stars, it appears that the relative frequency of red much exceeds that of any of the other colours, whether in rainy or dry weather; that red, green, and especially orange, are in much greater proportion in dry than in rainy weather; while on the other hand, the frequency of blue and yellow is more marked under the influence of rain. Taking Pollux and Capella as samples of yellow stars, M. Montigny found in them the frequency of red and especially of yellow was much increased, while the proportion of orange was notably diminished. The proportion of blue was the same as in stars of the other type.—M. Masquelin contributes a valuable paper on the development of the inferior maxillary in man, in which he establishes the concurrence of the two modes of ossification in one bone, viz., that by the direct or metaplastic process, and that by the indirect or osteoblastic. It would thus appear that the histological process of ossification cannot serve to determine the morphological value of a bone.—A paper on oscillations of the Belgian coast, by M. Van Rysseberghe, aims at proving a sinking of the coast at Ostend, but the validity of the evidence is doubted by the reporters.—An interesting report on Daltonism in relation to railway-working is presented by M. Delbecq.—M. Fraipont has a fourth and concluding article on the Acetiniæ of the Ostend coast, and Dr. Woodward records the discovery of a species of Brachyura crustacean in the coal formation near Mons (to which his attention was called by M. de Koninck).—The theory of the telephone is the subject of a note by MM. Navez.

*Journal de Physique*, May, 1878.—A new spectroscope here described by M. Thollon offers several advantages; it is direct vision and of perfect symmetry, and can be easily adapted to astronomical telescopes; the prisms (movable) are worked by a rigorously geometrical process, so that a ray coming along the axis of the collimator reaches the axis of the telescope only after twice traversing the whole system of prisms with the minimum of deviation; a considerable dispersive power may be had and may be widely modified in the same instrument; lastly, it affords very exact spectrometric measurements.—Some experiments in which

the electro-magnetic rotation of liquids is illustrated with acidulated water containing a little lycopodium powder, the effect being projected by means of Duboscq's new apparatus, are described by M. Bertin. M. Gernez has a note on the production of different hydrates in concentrated supersaturated solutions under the influence of a mechanical action (rubbing the walls of the vessel with a rigid rod).—The metallic reflection of polarised obscure calorific rays is studied by M. Mouton.

*Reale Istituto Lombardo di Scienze e Lettere, Rendiconti*, vol. xi. fasc. vii.—We note the following papers in this number:—Jealous insanity, by M. Verga.—Expression of pain according to sex, age, individual constitution, and race, by M. Mantegazza.—Contributions to the study of the Italian chiroptera, by M. Regalia.—On the cranium of Volta, by M. Lombrosi.—Examination of the observations made by the committee appointed to adjudicate a prize on the theme, "Programme of a Hospital for Contagious Diseases, suited to the City of Milan," by M. Zucchi.—Study on the prevalent diseases of the vine, by MM. Garovaglio and Cattaneo.

Vol. xi., fasc. viii., ix.—In these numbers we note the following:—On dominant diseases of vines, by MM. Garovaglio and Cattaneo.—Studies on the albumen of milk and on the origin of buttermilk curd, by MM. Musso and Menozzi.—On the causes and circumstances affecting hereditary transmission in animals, by M. Lemoigne.—Observations on elephantiasis in the Arabs in the environs of the Ticinese district, by M. Sangalli.—The third molar in the human race, by M. Mantegazza.—On the distribution and termination of nerves in the tendons of man and other vertebrata, by M. Golgi.

*Zeitschrift für wissenschaftliche Zoologie*, vol. xxx., supplement, part 1.—On the form of the crystalline cones in arthropod eyes, especially phronima, by Oscar Schmidt.—On anomia, with remarks on the muscular system of lamellibranchs, by H. von Jhering.—The poison apparatus of ants, by A. Forel, 41 pp. two plates.—The post-embryonic formation of limbs in insects, by H. Dewitz, dealing especially with formica, 28 pp.—Contribution to the structure and development of the lungs in mammals, by Ludwig Stieda; figures from embryonic sheep, mouse, and horse.—On the ornamental colouring of *Daphnidæ*, by August Weismann. The author believes the colour patterns are secondary sexual characters developed by sexual selection.—On the action of the voluntary muscles in land snails, by H. Simroth.

Vol. xxxi., part 3.—Researches on the structure and development of sponges, part 4, by F. E. Schulze; 42 pp., four plates. This part deals especially with the family *Aplysiadæ*.—Contribution to the development of feathers, by Dr. Th. Studer, Professor at Berne; the feathers of the Penguin, Megapodius, and *Dromæus*, are dealt with and figured in two plates.—On the fertilisation of the egg in *Petromyzon planeri*, by Ernst Calberla, with a discussion on fertilisation generally; 50 pp., two plates.—On the formation of ova, and on the male of *Bonellia viridis*, by Franz Vejdvovsky.

*Journal of the Russian Chemical and Physical Societies of St. Petersburg* (vol. x. No. 4) contains the following papers:—On the action of peroxide of hydrogen upon the oxygen compounds of thallium, by E. Schöne.—On the action of iodine upon certain urea and amidogen compounds, by W. Roudneff.—On nitrophthalic and oxyphthalic acids, by O. Miller.—On the admixture of zinc in different parts of the body after the intoxication with acetate of zinc, by M. Mazkewicz.—On the action of water and oxide of lead on the halogen compounds of ethylene hydrocarbons, by A. Eltekoff.—On the action of the same substances upon bromide of diamylene, by the same.—On the action of trichlorolactic acid upon urea, by D. Cech.—On the magnetic induction of the two spheres, by O. Chwolson.

### SOCIETIES AND ACADEMIES

#### LONDON

Geological Society, June 19.—John Evans, D.C.L., F.R.S., vice-president, in the chair.—Charles Louis Buxton, Wybrandts G. Olpherts, and William Phelps Richards were elected Fellows of the Society.—The following communications were read:—On the section of Messrs. Meux and Co.'s artesian well in the Tottenham Court Road, with notices of the well at Crossness, and another at Shoreham, Kent; and on the probable range of the lower greensand and palæozoic rocks under