vouchsafe some rather mysterious information. It would be "very wrong," says the Vice-President of the Council, to bring into force the "enormous voting power" of London on the question of forbidding some scheme of the local authority; and consequently he has put himself into communication with the London School Board, or rather with Sir Richard Temple, its Vice-Chairman, to devise a way out of the difficulty. With the result he seems particularly pleased, but, as the proposal of Sir Richard Temple is not made public, it is lawful to reserve our opinion. Then there is the question of the directing authority. It is not to be the Education Office; it is to be the Science and Art Department. Whether this will create any possible conflict of authorities it is difficult to say; but as those two bodies have the same head—the President and the Vice President of the Council—it may be hoped that the conflicts will not be common o easy.

It is not to be supposed that such a Bill as this, which creates a new rating authority, and therefore threatens the pockets of the ratepayers, will pass into law without a good deal of criticism, or that it will be universally popular. Our correspondent, Mr. Daniel Watney, this morning gives utterance to a protest of which the language is strong, though the arguments are unconvincing. He admits that the old apprenticeship system has broken down, and that some substitute must be found; but anything like a general system of technical instruction, directed by the local authorities and the Science and Art Department, is condemned out of hand. Mr. Watney seems to think that the new proposal would give too much power to Professors, for whom he entertains the contempt of the "practical man." The practical man is commonly little more than an imperfect theorist; and just now, in England, his success in maintaining the commercial supremacy of the country is not such as to invest him with commanding authority. For our part we do not see where the Professors are to come in under Sir William Hart Dyke's Bill; but if they did come in, perhaps it might not be a bad thing for the improvement of our theoretical, and therefore our practical, knowledge. As to the immediate prospects of the Bill, it would seem from its reception on Tuesday night that the House is favourable to it. Mr. Mundella made two objections: one to the delegation of all power of initiation to the localities, and one to the exclusion of all pupils below the sixth standard. The objections stand on different grounds. The former is one of principle, the latter one of detail. It is not likely that the Government will venture, so late in the Session, and at a time when other difficulties have to be met and faced, to propose a sweeping measure for imposing technical instruction by the act of a central Department. The ratepayer must be humoured if his assent is to be won. As to the second objection, we think Mr. Mundella is probably right. The choice lies between retaining all children at school till they have passed the fifth standard, and admitting fifth-standard children to whatever technical classes may be available. It would be unjust to deprive them altogether, after they have left school, of the opportunity of learning whatever can be learnt about their trades.

SCIENTIFIC SERIALS.

Bulletin de la Société des Naturalistes de Moscou, 1887, No. 1.—The *Scaphirhynchus*, being an elaborate comparative anatomical description (in German) of the genus and its species, by N. Iwanzow (with two plates).—On the great comet (43) of 1886, by Th. Bredichin (with a plate).—Enumeration of the vascular plants of the Caucasus, by M. Smirnoff (in French). In this third paper the author discusses the relative moistness of the air in the Caucasus; he gives most valuable tables from twenty-three Caucasian stations, and shows the dependency of moisture upon the prevailing winds; he then gives tables as to the amount and frequency of rain in different parts of Caucasia, and discusses this climatic factor in comparison with the distribution of rains upon the Mediterranean region generally. This most valuable paper is to be continued.—On calorimetric methods for determining minimal quantities of iron in mineral waters, by E. Kislakovsky.—Comparative discussion of the data collected in Russia as to the epochs of the blooming of plants which are freely growing or cultivated between the 44th and 60th degrees of latitude, by A. Dœngingk, being a most valuable paper (in German), containing a list of the times of blooming of 270 different species at Pyatigorsk, Kishineff, Sarepta, Orel, Moscow, and St. Petersburg. This is followed by a note on the blooming of 225 plants at Pyatigorsk and Elizabethpol in the Caucasus, as also on trees and bushes, endemic and exotic, in the Caucasus, showing the origin of the exotic plants.—On the parasitical pteromalines of the Hessian fly, by Prof. Lindeman. Five parasites, all new species, are described (in German) and figured.—Entomological notes, by the same, on the *Haltica vittula* of Russia, the *Scotylus amygdali* of Transcaucasia, and the *Cleigastra flavipes* from Moscow.—On the tooth-plates of the *Gulnariæ*, by Dr. W. Dybowski (in German).—On remains of the *Ursus spelæus* in Transcaucasia, by N. Anutschin (in German).—On the species of *Taraxacum* and *Glycyrhiza*, and *Alhagi camelorum*, by A. Becker.

No. 2.—Comparative anatomical inquiry into the structure of the cord of fishes and its cuticular envelopes, by W. Lvoff (with three plates). A most elaborate inquiry into, preceded by an historical sketch of the literature of, the subject (summed up in German).—A study on the palæontological history of the Ungulatæ in America and Europe, by Mary Pavlow (in French). After having summed up the ideas developed on this subject by MM. Cope, Wortman, and Schlosser, the author studies the group of *Condylathra*, and shows that its separate members may have been predecessors of some orders of Mammalia; that it is a mixed group containing species which have the characters of Ungulatæ as well as of Unguiculatæ; and that it may be considered as standing at the head of the genetic tree of the Ungulatæ and Carnivores. Madame Pavlow shows, moreover, that the *Condylathra* have also representatives in Europe.—Notes on the remains of man and *Ursus spelæus* in Transcaucasia, by N. Anutschin.—The Hessian fly (*Cecidomyia destructor*) in Russia, by Prof. Lindeman (in German), being an elaborate paper on the history of its spreading, its habits and devastations, and its development (to be continued).

SOCIETIES AND ACADEMIES.

LONDON.

Entomological Society, July 6.—Dr. D. Sharp, President, in the chair.—Mr. McLachlan remarked that at the meeting of the Society in October 1886 he exhibited a quantity of the so-called "jumping seeds" from Mexico, containing larvæ of *Carpocapsa saltitans*, Westw. The seeds had long ceased to "jump," which proved that the larvæ were either dead, had become quiescent, or had pupated; about a fortnight ago he opened one of the seeds, and found therein a living pupa. On the 4th inst. a moth (exhibited) was produced.—The President, on behalf of the Rev. H. S. Gorham, exhibited the following Coleoptera, lately taken in the New Forest: *Anoplodera sexguttata*, Fab., wholly black variety; *Grammoptera analis*, Fab.; *Colydium elongatum*, Fab.; and a specimen of *Tachinus elongatus*, Gyll., with brownish-red elytra.—Mr. S. Stevens exhibited a specimen of *Orsodacna humeralis*, Latr. (*lineola*, Panz., var.), taken by him at Norwood; he also exhibited a specimen of the same beetle taken by him fifty years ago in Coombe Wood; during the interval he had never seen it alive.—Mr. G. T. Porritt exhibited, on behalf of Mr. N. F. Dobrée, of Beverley, a series of about thirty specimens of a *Tæniocampa* he had received from Hampshire, which had previously been referred to as a red form of *T. gracilis*. Mr. Dobrée was inclined to think they were not that species, but *T. stabilis*.—Mr. A. C. Horner exhibited the following species of Coleoptera from the neighbourhood of Tonbridge:—*Compsochilus palpalis*, Esp. (5); *Acrognathus mandibularis*, Gyll. (4); *Homalota atrata*, Mann., *H. vilis*, Er., and *H. difficilis*, Bris.; *Calodera rubens*, Er.; and *Oxytelus fulvipes*, Er. He also exhibited a *Rhizophagus* from Sherwood Forest, which appeared to belong to a new species; and several specimens of *Holopedina polypori*, Först., also from Sherwood Forest, where he had found it in company with, and probably parasitic on, *Cis vestitus*.—Mr. Elisha exhibited two larvæ of *Zelleria hepariella*, Stn. Mr. Stainton remarked that as the greater part of the larvæ of *Zelleria* were attached to the Oleaceæ, it seemed strange that certain species had recently been found on Saxifrage.—Mr. Slater read a paper on the presence of tannin in certain insects, and its influence on their colours. He mentioned the facts that tannin was certainly present in the tissues of the leaf- wood- and bark-eating species, but not in the tissues of the carnivorous beetles, and that black colour on the elytra of certain beetles appeared to be produced by the action of iron on tannin. A

discussion ensued, in which Prof. Meldola, Mr. Poulton, Dr. Sharp, and others took part.

PARIS.

Academy of Sciences, July 18.—M. Janssen in the chair.—On the transition between the aromatic and fatty series, by MM. Berthelot and Recoura. By the synthetic process this transition is effected very clearly in the polymeric transformation of acetylene into benzene, and in the allied pyrogenous reactions. Some light has also been thrown on the more obscure problem of the transition in living organisms by Prunier's experiments with quercite, and Maquenne's with inosite. These studies are here subjected to further investigation by the measurement of the heats of formation of the various principles, themselves deduced from the heats of combustion. In all cases the passage of a body belonging to the fatty series to one of the aromatic series by deshydratation is shown to be accompanied by a considerable liberation of heat; that is to say, by a loss of energy corresponding to the excess of stability acquired by the fundamental hydrocarbonated nucleus.—Comparative locomotion: action of the pelvic member in man, the elephant, and the horse, by MM. Marey and Pagès. Their recent researches on the locomotion of the horse and elephant enable the authors to establish certain analogies and differences presented by the posterior member of these quadrupeds compared with the movement of the lower member in man. The parallelism, which is illustrated by several diagrams, bears both on the slow and rapid motion (walking and running) of the three types here under consideration. Contrary to the general opinion, there appears to exist in the step or pace of the quadrupeds a period of double rest more prolonged in the hind than in the fore-quarters. It is also shown that the trot in the horse corresponds unquestionably with the running action of man, but that elephants have no such action, just as man lacks the gallop of the horse, which in this respect thus stands at the head of the series. But, when urged to quicken their speed, the elephants broke into an action somewhat approaching that assumed by man when passing from a walk to a run. In general, both in slow and rapid motion, the action of the pelvic member remains essentially the same in all three types. The difference between them lies in the action on the concurrent limbs, which is slight between man and the elephant, much greater between these two and the horse.—On the habits of Phylloxera, and on the present state of the French vineyards, by M. P. Boiteau. During the year 1886 the author continued his experiments on the reproduction of Phylloxera, which he has cultivated for six consecutive years. In 1885 he had reached the nineteenth generation by the parthenogenetic process, all necessary precautions being taken to prevent fertilized insects from coming in contact with those derived directly from the winter egg. At present he has reached a second generation for 1887, or a total of 24 or 25 altogether, all these agamous generations being very healthy, lively, and prolific. The condition of the vines, which suffered so much last year, is described as highly satisfactory, with every prospect of a good vintage in most of the wine-growing districts.—Comparison of the energies radiated by platina and silver in fusion, by M. J. Violle. By the process here described the total radiation of platina is found to be 54 times that of silver in fusion. Yet this relation, great as it is, is far less than that of the luminous intensities, which is superior to 1000.—Solidification of liquids by pressure, by M. E. H. Amagat. Theoretically, J. Thomson's formula implies that at a given temperature solidification becomes possible under sufficient pressure, provided the density be greater in the solid than in the fluid state. But no instance has hitherto been known of any liquid properly so called being solidified by pressure alone. Now, however, the author, after numerous experiments, has succeeded in solidifying the bichloride of carbon (C_2Cl_4), obtaining some crystals which are here figured, and which appear evidently to belong to the cubic system. This substance is solidified at the temperatures of $-19°{\cdot}5$, 0°, 10°, and $19°{\cdot}5$ C. under the respective pressures of 210, 620, 900, and 1160 atmospheres. This and other results would seem to imply that every fluid has a critical point of solidification; that is, a temperature above which solidification will take place under no pressure: just as there appears to be a temperature below which the body remains solid under the slightest pressures.—On the calorific conductibility of bismuth in a magnetic field, by M. A. Righi. The considerable increase of electric resistance, and the intense rotation of the equipotential lines (Hall's phenomenon) which occur when bismuth is introduced into the magnetic field, naturally led to the inference that a decrease of calorific conductibility and a rotation of the isothermal lines should take place under the same conditions. The author has now completed a series of extensive experiments, which completely confirm this supposition, and the summary results of which have been published in the *Resoconti dell' Accademia Reale dei Lincei* for June 12; that is, eight days before the analogous communication recently sent by M. Leduc to the *Comptes rendus*.—On the *Chlorœma dujardini* and *Siphonostoma diplochaitos*, by M. Joyeux-Laffuie. In reply to M. Kunstler, it is pointed out that there is no ground for supposing that these two organisms are identical, the former being from 15 mm. to 20 mm., the latter 8 cm. long.—On the earthquake of June 9, 1887, in Central Asia, by M. Venukoff. A detailed account is given of the disastrous effects of this disturbance, especially in Vernoï, a town of 17,000 inhabitants, where 1700 out of 2500 buildings of brick and stone were levelled with the ground, while 800 wooden houses remained almost uninjured. As many as 200 persons perished in Vernoï, and over 800 in the surrounding district, chiefly in the Ala-tau Mountains. The first great shock of June 9 has been followed by several others, which still continue, obliging the inhabitants to take shelter under tents on the open plains.—On a hailstone inclosing a stony nucleus, by M. G. Tissandier. This specimen fell during a violent thunder and hailstorm in the Tarbes district on June 20. The nucleus consisted of some gypsum, which had clearly been worked, and no doubt sucked up by a water-spout to a thunder-cloud, where it became incrusted with ice.

BOOKS, PAMPHLETS, and SERIALS RECEIVED.

Course of Practical Instruction in Botany, part ii.: Bower and Vine (Macmillan).—The Teaching of Geography: A. Geikie (Macmillan).—Sunlight, Second Edition, 1887 (Trübner).—Morality and Utility: G. P. Best (Trübner).—The Scenery of Scotland, Second Edition: A. Geikie (Macmillan).—The Forms of Nasal Obstruction: G. Macdonald (A. P. Watt).—Report of the Royal Commission for the Colonial and Indian Commission, 1887 (Clowes).—Smithsonian Report, 1885, part i. (Washington).

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