Prof. Cunningham contributed a short paper *On two Species of Crustacea*, one belonging to the remarkable fresh-water genus, the *Atya spinipes*, and the other belonging to an apparently undescribed species of the genus *Pontonia*, which are remarkable for being found as tenants of the shells of living bivalve molluscs. The two specimens were found in the Singula Archipelago.

A paper, contributed by Mr. T. Lister, *On the Spring Migrating Birds of North England*, was read by Prof. Cunningham.

Mr. E. R. Lankester brought the subject of *English Nomenclature in Systematic Biology* before the department, and said it would be a considerable gain to science if there could be introduced a series of terms distinctly English in their etymology, which would be accepted as authoritative and used throughout the country. The only question was whether it was possible, by any action on the part of scientific men, to introduce such a series of terms. He suggested the appointment of a committee of men whose names would be received as authoritative throughout the country, to draw up a list of terms which should be used for the groups of the animal and vegetable kingdom.

A discussion followed, in which Prof. Thiselton Dyer, Mr. Bentham, Mr. A. W. Bennett, Prof. Cunningham, Miss Becker, Prof. Dickson, and Dr. Sclater took part, the generally expressed opinion being unfavourable to the change proposed.

A paper was read by Mr. H. Airy *On a peculiar form of Leaf-arrangement.*

SCIENTIFIC SERIALS

Justus Liebig's Annalen der Chemie, Band 172, Heft 3.—This part contains the following papers:—Communications from the chemical laboratory of Greifswald.—86. On metatoluidine, by F. Lorenz. The author describes the preparation of this substance. Paratoluidine is first treated with acetic anhydride, and para-acettoluide thus obtained, which, by treatment with nitric acid, yields metanitropara-acettoluide. By heating with alcoholic potash this latter substance is converted into metanitroparatoluidine; this last body is acted on by nitrous acid, and the diazo-compound treated with alcohol leaves metanitrotoluol, which, by reduction with tin and hydrochloric acid, gives metatoluidine. Several of the salts of this base are described, likewise the conjugate sulpho-acids, dibrominated substitution derivatives, &c.—87. Note on the quantitative determination of paratoluidine in presence of orthotoluidine, by the same author. —88. On metabromorthosulphotoluic acid, by Dr. E. Weckwarth. The preparation of this acid, which possesses the formula $C_6H_2\begin{cases}CH_3\\SO_3\\Br\\N\end{cases}>N$ is described. The potassium, sodium, barium, strontium, copper, and lead salts have been analysed, and the chlorine, amido, and nitro substitution derivatives examined.—89. On orthoamidoparasulphotoluic acid, by Dr. M. Hayduck. The barium and lead salts are first described; the brominated acid and its potassium, barium, and lead salts are next treated of. The amido acid distilled with potassic hydrate gives off ammonia, and aniline and a potassium salt of anthranilic acid, $C_6H_3\begin{cases}H\\NH_2\\COOK\end{cases}$ is obtained. With hydrochloric acid and potassic chlorate the amido acid yields trichlororthotoluquinone, $C_6\begin{cases}CH_3\\O_2\\Cl_3\end{cases}$, from which the corresponding hydroquinone has been obtained. By the action of bromine on the amido acid a dibrominated acid is obtained, of which the barium salt has been analysed. Diazo-orthoamidoparasulphotoluic acid, $C_6H_3\begin{cases}CH_3\\N\\SO_3\end{cases}>N$, obtained by the action of nitrous acid on the amido acid, is next treated of. This body acted on by water gives orthocresolparasulphonic acid. The nitro-diazo acid is finally described.—90. On a new nitro-toluidine, by Dr. O. Cunerth.—On paramido-orthosulphotoluic acid, by Dr. F. Jenssen. The nitro-acid, $C_7H_6(NO_2)SO_3H.2\frac{1}{2}H_2O$, and several of its salts are described, also the chloride and amide. The amido acid is then treated of, likewise its salts and substitution derivatives.—On some decompositions of pyroracemic acid, by Dr. C. Böttinger. This lengthy memoir is divided into three sections: the first treats of the decomposition of the acid in acid solutions, the second of its decomposition in alkaline solutions, and the third of its decomposition *per se*. Among other things the author describes in great detail the preparation and properties of uvic acid and its salts.—On acenapthene and naphthalic acid, by Arno Behr and W. A. Van Dorp. The authors have examined several of the salts of the acid, its methylic ether and anhydride. The constitution of the two bodies is also discussed.—Researches on the volume constitution of solid bodies, by Dr. H. Schröder.—K. Helbing contributes a paper on an examination of some benzene liquors, and one entitled "Research on a new earth resin." This resin is found in large masses in a stone quarry at Enzenau, between Tölz and Heilbrunn. Nineteen per cent. of the resin is soluble in ether, and nine per cent. in ether and hot alcohol. The insoluble portion contains iron pyrites and a hydrocarbon of the formula $C_{40}H_{62}$. The ethereal extract contains a substance of the formula $C_{40}H_{62}O_2$, melting at 192°. The hot alcoholic extract gave a substance of the composition $C_{40}H_{60}O_8$.—On cymene, by F. Fittica. The author establishes the identity of the cymenes from camphor, ptycholisol, and thymol, and furnishes evidence that the propyl contained in the cymenes is normal propyl. The isomeric oxy- and thio-cymenes are also treated of.—The constitution of benzene, by A. Ladenburg.—On derivatives of phloretin, by Hugo Schiff. The author treats of the preparation of phloretin, of phloretic acid, and phloroglucin, likewise of phloroglucide and of triphloretide. The present part contains the index for vols. 169, 170, and 171.

Zeitschrift der Œsterreichischen Gesellschaft für Meteorologie, Aug. 15.—Dr. H. Wild contributes to this number some suggestions for the consideration of the Permanent Committee of the International Congress on the question of the establishment of an International Meteorological Institution. Before the Congress at Vienna he was altogether in favour of the scheme, but now feels persuaded that one institution could hardly exercise the large functions proposed with advantage. The difficulty of directing from one spot a number of stations scattered over the globe would be great, the conditions of these stations would not be familiar, the construction of isobaric charts, &c., could only be undertaken with exact data and co-operation of the central national offices, and the modification of instruments, &c., would not be a proper task to be attempted at any one place, with its narrow range of climatic conditions. The failure of one of the central offices would cripple the results produced by the Institution, and, besides, the energetic working of these offices would be endangered if they were to delegate some of their present problems to the Institution. The national offices which now occupy themselves with general meteorology might bestow too much attention to local matters. These objections would be avoided if each central office were to attend specially to some branch of the meteorology of the globe mutually agreed upon; for instance, one to the preparation of synoptic charts, another to rainfall, and so forth. The results of the various lines of research could then be interchanged, and the failure of one office would not damage the work of the others. The establishment and maintenance at common expense of international stations proper in uncultivated countries, and the publication of their observations, Dr. Wild holds would be best undertaken by the countries to which these stand in the nearest relation. There would remain, then, for the Institution the work of interchanging the results and keeping up the relations of central offices, the arrangement of occasional Congresses, questions concerning instruments, and the like.—Among the *Kleinere Mittheilungen* we observe an abstract of the important report of Mr. Blanford to the Government of Bengal for the year 1873.

Poggendorff's Annalen der Physik und Chemie, No. 5, 1874.—In 1868 Prof. von Rath published some observations on a form of silica to which he gave the name Tridymite. It always crystallises in twin hexagonal prisms, and has a low specific gravity. His further observations show lines of division between the elements forming the twins, and in these lines the third crystal in tridymite is developed. There is a similar persistence of the division plane between crystals of humite, and analogous triple crystals in anorthite, and an interlacing of crystals in leucite; and he concludes that while two crystals cannot be united to each other in many crystal groups, yet they can be united to a third crystal. Fine specimens, three millimetres long, reaching him from the trachytes of Pachuca in Mexico, he has made full measurements. The crystals, however, are generally of small

size relatively to the accompanying minerals. They commonly occur in drusy cavities of the trachytes associated with specular iron, hornblende, and augite. Details are given of the mode of growth of the twins, their various forms and intimate combinations.—Another paper by the same author describes a remarkable crystal of calc-spar from Lake Superior. It is shown by the formulæ of the faces to be a form which is distinct from any hitherto observed. It is transparent, and occurs with native copper in amygdaloid melaphyre.—Another paper by Von Rath is on a singular combination of rutile and specular iron. The fine spiculæ of rutile are developed from between the plates of a red kind of specular iron, and may be a subsequent formation. It occurs in association with crystals of quartz and adularia in clefts or druses in a fine grained talcose gneiss.—Von Rath's next paper is On remarkable artificial crystals of pure copper. At the meeting last year of the German Geological Society at Weisbaden, Prof. v. Seebach exhibited crystalline copper which Prof. Senft of Eisenach had obtained by galvanic electricity between small rings of zinc and copper. From an aggregation of very small crystals a large mass was formed of the size of four millimetres. The crystals are always twins, with the free end most produced, and have a form which has not heretofore occurred in native copper, though it has been found in galena and binnite. The octahedral faces of the crystals are flat and shining, while those of the icositetrahedron are curved and less perfect.—Another paper discusses the hypersthene of Mont Dore, described by Des Cloizeaux, a mineral which there occurs in druses in trachyte in crystals three millimetres long, associated with crystals of sanidine and tridymite.—Von Rath's last memoir describes a new zeolite, named foresite, from the tourmaline granite of Elba.—Prof. Th. Petruschevsky, of St. Petersburg, who has devoted himself since 1862 to the phenomena of magnetism, now publishes the results of his investigation on the direct and indirect determination of the pole in magnets. Starting with the basis of Biot's curve of magnetic intensity, he points out that it is as easy to determine the pole theoretically as empirically, details his two methods, and the apparatus wherewith they are tested. He then considers the determination of the pole in electro-magnets, and finally enumerates results.—Dr. Gustav Junghann explains a simple law for the development and grouping of crystal zones. He introduces some maps of anorthite into the memoir, in which the formulæ of the faces are all set down in tabular form in square spaces.—Herr G. Hagen contributes a memoir On the resistance offered by the air to plane discs moved through it.—Herr J. J. Müller examines one of the Hamiltonian theories of movement which underlies the principles of mechanics.—Herr von Laspeyres has an interesting experimental paper On the existing and a new thermostat, and Herr Rammelsberg describes the crystalline form and modifications of selenium.—The most interesting reprinted paper is Terquem's account of the vibroscope for accurately determining number of vibrations.

SOCIETIES AND ACADEMIES

LEEDS

Naturalists' Field Club and Scientific Association, Sept. 15.—Mr. Edward Thompson, vice-president, in the chair.—Mr. James Abbott mentioned that he had gathered *Butomus umbellatus* in flower at Kirkstall, on Sept. 12. The plant had not been noted in the Leeds district for upwards of twenty years past, when it grew in the stream at the foot of Woodhouse Ridge.—Mr. Henry Pocklington, in conjunction with Mr. James Abbott, demonstrated the action of the induced current upon the protoplasmic gyrations in the cells of *Vallisneria spiralis*, by means of a simple electric slide and a small inductorium. The effect produced was very marked. The circulation of the protoplasm stopped almost instantly. It was, in fact, as was described by one of the members, as though a strong "break" were put on. The protoplasm was corrugated by the rapid contractions induced, and the results taken altogether were of the most interesting character. Mr. Pocklington will probably communicate a more complete description of his apparatus and its results at an early date.

PARIS

Academy of Sciences, Sept. 21.—M. Bertrand in the chair.—The following papers were read:—Note on barium sulphocarbonate, by M. P. Thenard. Since M. Dumas' proposal to use sulphocarbonates for the destruction of *Phylloxera* these salts have acquired a new interest. The barium salt is easily prepared by agitating a strong solution of barium sulphide with carbon disulphide. The author describes a process for manufacturing this salt on a large scale, and proposes to turn his attention to the manufacture of the potassium salt.—On a new mercury pump, by M. de Las Marismas. This apparatus is stated to cost 35 francs, and to exhaust a receiver of six litres' capacity to one millimetre pressure in four minutes; all pressures from that of the atmosphere up to an absolute vacuum can be obtained, the gas contained in the receiver can be collected if necessary, and a vacuum can be preserved indefinitely.—On the action of alimentary or medicamental liquids on tin vessels containing lead, by M. Fordos. The author has tried the action of wine, vinegar, lemonade, &c., upon hospital vessels containing 10 per cent. of lead; this latter metal was invariably found in the fluids used, and the author concludes that the use of this alloy may be attended with great danger.—Researches on the colouring matters of garancine, by M. A. Rosenstiehl. The colouring materials of garancine—alizarine, pseudopurpurine, purpurine, and its hydrate—have all been investigated in great detail by the author. Purpurine and its hydrate are formed at the expense of pseudopurpurine; the products of the reduction of purpurine have been studied, and two isomers of this body obtained, one of which has been prepared by synthesis starting from benzoic acid. Pure alizarine is prepared by heating the commercial substance with water to 200° C. for some hours, a small quantity of caustic alkali being added. Impurities are totally destroyed by this treatment, and the product of the operation is further purified by frequent crystallisations. Pseudopurpurine is a very unstable body; heating with water or alcohol transforms it into a mixture of purpurine and its hydrate. From the present researches it seems that garancine red and the rose colouring matter yielded by garancine flowers cannot be obtained from alizarine alone; the presence of purpurine or its hydrate is indispensable. The product of the action of reducing agents on purpurine and its hydrate is purpuroxanthine, an isomeride of alizarine.—New experiments on the nature of the sulphuretted principle of the waters of Luchon, by M. F. Garrigou. This is a reply to a paper by M. Filhol in the *Compt. Rend.* for Sept. 7.—Observations relating to a recent communication by M. Lichtenstein on some points in the natural history of *Phylloxera vastatrix*, a letter from M. Balbiani. The author again enforces his views as to the non-identity of the *Phylloxera* of the vine and of *Quercus coccifera*.—M. P. Thenard made known to the Academy the measures adopted by M. le Prefêt de Saône-et-Loire on the approach of *Phylloxera*.—M. le Ministre de l'Agriculture et du Commerce and M. le Ministre des Finances consulted the Academy on the employment of tobacco juice for the destruction of *Phylloxera*.—Communications relating to *Phylloxera* were also received from MM. J. Bond, H. de Martiny, R. Delpit, &c.—Properties of the "implexes" of surfaces defined by two characteristics, a geometrical note by M. Fouret.—On luminous diffusion, by M. A. Lallemand.—On Warwickite, by M. J. Lawrence Smith. The author assigns to this mineral the formula $\dot{M}g_5\ddot{B}_3 + (\dot{M}gFe)\dot{T}i_2$.—On the *rôle* played by gases in the coagulation of blood, by MM. E. Mathieu and V. Urbain.—On the movement in the bilabiate stigmata of the Scrophulariaceæ, Bignoniaceæ, and Sesameæ, by M. E. Heckel.—Observation of a bolide at Versailles on the evening of the 14th of September, by M. Martin de Brettes.

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Erratum.—Vol. x. p. 416, col. 1, line 22 from bottom, for "Norway" read "Moray."