

1838 had 2,000 inhabitants, had in 1872 only 650. M. Leborgne shows, however, that although alcoholism does not exist in these islands, where fevers and smallpox are unknown, rheumatic, neuralgic and nephritic affections are not uncommon, whilst phthisis and scrofulous degeneration are attended by a frightful mortality, which seems to point to the injurious results of consanguineous unions. M. Broca is disposed to attribute the gradual diminution of the Polynesian and other analogous peoples to the moral action of certain depressing influences to which savages are exposed when they find themselves brought suddenly in contact with civilised men. The very contact of civilisation seems to exert in and for itself a destructive action on their physical nature. M. de Quatrefages considers, in a separate paper, the same question in reference to the general diffusion amongst the Polynesian races of tuberculosis, which was not observed by the early discoverers, but has now attained such dimensions that its presence could scarcely escape the notice of the least observant travellers. In the universality of its destructive action on all the Australasian islands, M. de Quatrefages sees another and most incontrovertible evidence of the unity of the entire race.

*Zeitschrift der Oesterröichischen Gesellschaft für Meteorologie*, June 15.—In this number is commenced a review by Herr Fritsch of M. Poëy's "New Classification of Clouds," published in the *Annales Hydrographiques*. After insisting on the importance to sailors, farmers, gardeners, and others, of a knowledge of clouds with a view to prediction, M. Poëy has remarked how few observers have recorded the kind of cloud, the shape, rate of movement, course, and change of direction or shift, which differs with the height at which it floats. The ideas of men who have busied themselves with clouds, from Aristotle to Maury, are commented upon and criticised. Lamarck was the first to divide clouds into classes, and Howard's system, which followed independently a year later, differed but slightly in the main from that of the French naturalist. The stratus of Howard he regards as nothing but a fog, and the cumulo-stratus as a cumulus. His own fracto-cumulus resembles Lamarck's "atroupés," and his pallio-cirrus and pallio-cumulus, determined by observation in the Antilles, replace the nimbus of Howard. The sub-divisions of Admiral Fitzroy, based merely upon quantity, lead to error. As to the stratus, the first mistake arose from its being described as a mist by Howard himself, and the next from his followers raising the thin streak of fog to the dignity of a cloud. For Kämtz says of the cirro-stratus, that when seen at the zenith it appears to be made up of a number of cloudlets, but near the horizon like a long and very narrow streak. This cloud might therefore be confused with the stratus as represented, especially as both are common at sunrise and sunset. This error, namely, making the stratus anything but a fog, has been followed in all publications since 1815, including one of Kämtz in 1840, and the plates of Schübler, of the Smithsonian Institution, of Maury, and of the French Ministry of Marine (see NATURE, vol. ix. p. 163).

*Reale Istituto Lombardo*. Rendiconti: t. vii. fasc. vi., March.—The following papers are contained in this number:—In hydraulics there is a paper by M.E. Lombardini, On floods and on the inundation of the Po in 1872.—In experimental physics, Prof. Rinaldo Ferrin contributes a paper On the reversal of the current in Holtz's electric machine.—Prof. Alfonso Corradi contributes a paper to the history of medicine on certain unpublished writings of Morgagni.—Tome vii. fasc. vi., April, contains the following papers:—In the section of mathematical and natural science there is an anthropological paper by Prof. Cesare Lombroso, On tattooing amongst criminals in Italy.—In chemistry there is a note by Prof. Egidio Pollacci, On the action of sulphur on earthy carbonates, particularly on calcium carbonate as relating to geology and agriculture.—In mechanics, Prof. Giuseppe Bardelli contributes a mathematical note entitled "Researches on the moment of inertia."

*Fünfte Jahrbuch der Schlesischen Gesellschaft für Vaterländische Cultur* (1872).—This Society has its head-quarters at Breslau, and, according to the present report, numbers 443 acting, 32 honorary, and 198 corresponding members. It is at present under the presidency of Dr. Göppert. The account of proceedings, now before us, attests considerable vigour and industry during the year. In the department of natural science, perhaps the most important paper is that of Prof. Cohn, giving the results of his observations on Bacteria, and their relation to putrefaction and contagion.—Dr. Roemer reports on some bone-remains of rhinoceros found in the Tra-

chenberg; and Dr. Göppert traces the history of the elk in Silesia.—The family of the Cirratulides is described by Prof. Grube; and we also find accounts of a collection of Javan birds, and Transcaucasian insects in the Society's museum, and of plant-eating Cetacea.—Dr. Poleck discusses the experimental bases of the so-called modern chemistry.—Prof. Cohn's report in the botanical section is of considerable length. We may note in it Dr. Stenzel's paper, On the Riesengebirge as a limit of vegetation. He finds that about thirteen species of phanerogam and cryptogram vascular plants belong only to the Silesian side, and about as many only to the Bohemian side of the range. The entire number of plant species in that highland region is estimated at about 200, so that about an eighth finds its limit at the watershed of the range.—There is also an instructive paper by Prof. Göppert, On the relation of the plant-world to weather.—Dr. Schröter communicates a list of the fungi he has met with at Rastatt during a four years' residence; and Dr. Göppert reports on the fungus collection in the museum of the Botanical Garden in Breslau.—Descriptions of flora of the Grünberg and other localities in Silesia are furnished by various observers.—The Society has a section specially devoted to horticulture, and the report on this, presented by M. Müller, contains a good deal that will be found of value by the practical gardener.

## SOCIETIES AND ACADEMIES

### LONDON

Geological Society, June 24.—John Evans, F.R.S., president, in the chair.—The following communications were read:—New Carboniferous Polyzoa, by Prof. John Young, and Mr. John Young, Hunterian Museum, Glasgow University (see NATURE, vol. ix., p. 456).—On *Palaeocoryne* and other polyzoal appendages, by Prof. John Young and Mr. John Young, Hunterian Museum, Glasgow University.—The steppes of Siberia, by Thomas Belt. The author described the portion of the Siberian steppes traversed by him as consisting of sand and loam. The best section seen by him was at Pavlodar, where he found 1 ft. of surface-soil, 20 ft. of stratified reddish-brown sand, with lines of small gravel, 8 ft. of light-coloured sandy silt, 15 ft. of coarse sand, with lines of small pebbles and one line of large ones, and 6 ft. of clayey unlaminated silt, with fragments of the bed-rock in its lower half, the bed-rock being magnesian limestone much crushed at the top. The generally accepted marine origin of the great plain was said to be negated by the absence of sea shells in its deposits, whilst *Cyrena fluminalis* occurs in them. The author regards them as deposits from a great expanse of fresh water kept back by a barrier of polar ice descending far towards the south. In its greatest extension this ice-barrier would produce the crushing of the bed-rock; and as it retreated, the water coming down from the higher ground in the south would cover a continually increasing surface.—On the microscopic structure and composition of British Carboniferous dolerites, by S. Allport.—Additional remarks on boulders, with a particular reference to a group of very large and far-travelled erratics in Llanarmon parish, Denbighshire, by D. Mackintosh.—Note on the Binger diamond-fields, by Archibald Liversidge.—Remarks on the working of the molar teeth of the *Diprotodon*, by Gerard Krefft, F.L.S.; communicated by the president. In this paper the author criticised a figure of the lower molars of *Diprotodon*, published by Prof. Owen, on the ground that the teeth are represented in it in an unbraded state, and stated that when the last tooth breaks through the gum the first of the series is always worn flat. He also remarked on the peculiar modification of the premolar in the genus *Diprotodon*.—Descriptions of species of *Chatetes* from the lower Silurian rocks of North America, by Prof. H. Alleyne Nicholson, F.R.S.E. In this paper the author accepted the union of *Chatetes* and *Stenopora* made by Milne Edwards and Haime, and stated that *Monticulipora* D'Orb. and *Nebulipora* McCoy, also seemed to him to belong to the same generic group, for which he proposed to employ the name *Chatetes*.—On the composition and structure of the bony palate of *Ctenodus*, by L. C. Miall; communicated by Prof. P. Martin Duncan, F.R.S.—Notes on a railway section of the Lower Lias and Rhætics between Stratford-on-Avon and Fenny Compton, and on the occurrence of the Rhætics near Kineton and the Insect-beds near Knowle in Warwickshire, and on the recent discovery of the Rhætics near Leicester, by the Rév. P. B. Brodie.—The resemblances of ichthyosaurian bones

to the bones of other animals, by Harry Govier Seeley, F.L.S. In this paper the author endeavoured to give precision to the term ichthyosaurian by analysing the characters of the Ichthyosaurian skeleton into the resemblances which it presents to skeletons of other vertebrates. Ichthyosaurian characters are subdivided into Mammalian, Avian, Crocodilian, Chelonian, Lacertilian, Camelionian, Rhynchocephalian, Ophidian, Urodelan, Piscine, Plesiosaurian, Dinosaurian, Dicyodont, and Labyrinthodont. By thus classifying the characters it is anticipated that the affinities of the Ichthyosaurian type may be rendered evident.—The resemblances of Plesiosaurian bones with the bones of other animals, by Harry Govier Seeley, F.L.S. This paper is an attempt to make a similar analysis of the Plesiosaurian skeleton.—On the tibia of *Megalornis*, a large struthious bird from the London clay, by Harry Govier Seeley, F.L.S. The author considered that the skull named by Prof. Owen *Dasornis* might, if it belonged to a bird, be referred to *Megalornis*; but he detailed considerations which led him to suggest that *Dasornis* may possibly be a fish.—On cervical and dorsal vertebrae of *Crocodylus cantabrigiensis* Seeley, from the Cambridge Upper Greensand, by Harry Govier Seeley, F.L.S.—On the base of a large Lacertian skull from the Potton sands, by Harry Govier Seeley, F.L.S. This specimen was interpreted by the author as the ankylosed basioccipital and basisphenoid of a Dinosaur. The author did not regard the specimen as giving support to Prof. Huxley's hypothesis of the Avian affinities of Dinosaurs.—A section through the Devonian strata of West Somerset, by Harry Govier Seeley, F.L.S.—On the pectoral arch and fore limb of *Ophthalmosaurus*, by Harry Govier Seeley, F.L.S. After some remarks on the structure of the pectoral arch in *Ichthyosaurus* the author described parts of a skeleton discovered by Mr. Leeds in the Oxford clay, on which he founded the genus *Ophthalmosaurus*.—The glacial phenomena of the Eden Valley and the western part of the Yorkshire Dale district, by J. G. Goodchild; communicated by H. W. Bristow, F.R.S. This paper is a continuation, in a northward direction, of the investigation of glacial phenomena which formed the matter of a paper lately read before the Society by Mr. Tiddeman, and published in the Society's journal.—Geological observations made on a visit to the Chaderkul, Thian Shan range, by the late Dr. F. Stoliczka. In this paper the author gives an account of the geology of the district traversed by him in his journey from near Kashgar to Lake Chaderkul on the Russian frontier, a distance of about 112 miles, his route lying among the southern branches of the Thian Shan Range. Three principal ridges were crossed. The first, or "Artush ridge," consisted of newer Tertiary deposits of bedded clay and sand, mostly of a yellowish white colour. These "Artush beds" were traced by the author for a distance of 22 miles. The southern slopes of this range were covered with gravel from 10 to 15 ft. thick, which passes into a conglomerate with a thickness of about 200 ft. The second, or "Kokan range," is formed on the southern side of old sedimentary rocks, whilst the northern is occupied by newer Tertiary deposits and basaltic rocks, the former consisting of shales and limestones, in which the author found some fossils, inducing him to refer them to the Trias. These are succeeded by some dark-coloured shales, slates, and sandstones, dipping at a high angle to the north. On the denuded edges of these the new Tertiaries rest, consisting of sandstones interstratified with basaltic rocks. These latter increase in thickness till just beyond Kulja an old "somma" is reached, with perpendicular walls rising to a height of 1,500 ft. above the river. The cone of the volcano has disappeared by subsidence. The third ridge, "Terek-tagh," consists of old sedimentary rocks, chiefly limestones.—Note upon a recent discovery of tin-ore in Tasmania, by Charles Gould.—Note on the occurrence of a Labyrinthodont in the Yoredale rocks of Wensleydale, by L. C. Miall; communicated by Prof. Huxley, F.R.S. The author briefly describes a specimen, discovered by Mr. W. Horne, of Leyburn, in the Lower Carboniferous Rocks there, comprising casts of five bones. He considers that these bones belong to an animal of higher rank than any known fish, and thinks that the Lower Coal-measures of Glasgow, with *Loxonema*, may be of earlier date than the Yoredale Rocks.—Geological Notes on the route traversed by the Yarkund Embassy from Shahidulla to Yarkund and Kashgar, by Dr. F. Stoliczka. The author described the rocks observed by him along the course of the Karakash river and through the Sanju pass as chiefly metamorphic, and very highly inclined, until near Yam sedimentary rocks rest unconformably on the schists. These are probably Palæozoic. Later rocks

occur near the camp Kiwáz, some resembling the rocks of the Nahún group, and underlain by deposits containing Carboniferous fossils. At Sanju coarse grey calcareous sandstones and chloritic marls of Cretaceous age occur. True Löss occurs in some of the valleys.—The hematic deposits of Whitehaven and Furness, by J. D. Kendall.—Notes on the Physical Characters and Mineralogy of Newfoundland, by John Milne. Notes on the Sinaitic Peninsula and north-western Arabia, by John Milne.—Giants' Kettles at Christiania, by MM. W. C. Brøgger and H. H. Reusch; communicated by Prof. Kjerulf. The authors first refer to the popular notices about giants' kettles, and describe in detail a number of these pits, which were examined and emptied near Christiania. They then mention the theory concerning their origin. From their own facts and reading they conclude that many of these remarkable pits were made at the bottom of "Moulines" during a glacial period, when the locality was covered with ice on the scale of existing ice in Greenland. The contents of these pits are traced to their parent rocks, which are higher up towards the great valley of Gulbrandsdal, in which glacial phenomena abound. They are inclined to conclude that moraine matter was washed off the glacier-ice from time to time, and left in the pits at last.

Geologists' Association, July 3.—Henry Woodward, F.R.S. president, in the chair.—On the deposits now forming in British seas, by G. A. Lebour, F.G.S. The author limited his present task to a brief description of the principal constituents of British sea-bottoms, with particular reference to their distribution and its causes. The materials are of mechanical, chemical, or organic origin.—*Rock-bottoms*. In some places no deposit occurs, the bare rock being left. The largest of these bare spots, in British seas, occurs in the western half of the Channel Valley. Their distribution is directly connected with that of currents, and this is strikingly proved by their being limited to no relative depth; for, in the Channel, their range extends entirely across the valley. Another bare area exists at the point where the Atlantic cable enters the yet deeper region of the Atlantic ooze in 500 fathoms water. The specimens brought up by the sounding instruments from such places consist of weathered and rotten stone, pointing to chemical rather than mechanical disintegration, even where powerful currents are present.—*Marine deposits*. These consist chiefly of sand, with occasional islands of clay, mud, gravel, and shell detritus. The broader the sea the greater the proportion of sand: thus the North Sea bottom is especially a sandy one, though towards the centre the sand becomes muddy over a considerable region. Sandy bottoms also largely prevail in the north-western seas and on the west coast of Ireland; but south of Ireland a large expanse of pure mud and muddy sand extends in a southeasterly direction.—*Organic deposits*. In the Channel the shell deposits attain their greatest development as regards British seas. There they form two long, occasionally broken lines, following at a short distance the English and French shores, and forming at the outer mouth of the Channel a vast shell bank. These deposits actually cross the broad sea-valley partly over and considerably to the west of the spread of bare rock previously mentioned. Beyond the ocean valley which lies between the Hebrides and the Rock-hall reef, there occurs a fish bank more than three miles in length, affording us an inkling of the manner in which some of our long-fossilised fish-beds may originally have been accumulated.—*Fluvio-marine deposits*. The Thames, Seine, and Tay form mud banks in a sandy sea. The submarine delta of the former has the shape of a triangle, of which the apex points seawards; that of the Seine is also triangular in outline, but the apex points landwards. Such submarine deltas can only be recognised when the materials of which they consist are distinct from those forming the prevailing sea-bottom. Although much of the above materials are at present incoherent, especially the sands, it is not probable that the larger features of the sea-bottoms are liable to important changes, whilst the surrounding geographical conditions remain unaltered. The same agencies, which sweep certain spots, have heaped-up material elsewhere, and the relative form of both covered and uncovered portions of the sea-floor is preserved by them. The points of the greatest violence of current action are shown by the bare rock patches, whilst the intermediate stages of agitation are represented by coarse shingle, sandy gravel, sand, and finally patches of mud or clay supervene, which, to a certain extent, indicate centres of calm.

Entomological Society, July 6.—Sir Sidney Smith

Saunders, president, in the chair.—Prof. Westwood exhibited specimens of *Haltica aurata*, which he had found to be very injurious to young rose-leaves. Also, a portion of a walnut attacked by a Lepidopterous larva, probably a Tortrix; but he was unable to name the species, as it produced only an ichneumon. It was the first instance he had known of a walnut being attacked by an insect in this country. Mr. F. Moore stated that he had on one occasion reared *Carpocapra splendana* (a species that usually feeds on acorns) from a walnut.—Prof. Westwood made some remarks on the Yucca moth (*Pronuba yuccasella* Riley), of which some fifty specimens had been sent to him, in the pupa state, by Mr. Riley; but he had succeeded in rearing only three. He exhibited a drawing of a portion of the insect, showing the extraordinary form of the pulpi, which was especially adapted for collecting the pollen, with which it impregnated the female flowers. He directed attention to a full description of the insect and its habits by Mr. Riley, in the sixth Annual Report of the Insects of Missouri.—Prof. Westwood also exhibited some bees which had been sent to him from Dublin, having been found attacking the hives of the honey-bees. They were smaller than the honey-bee, and black, and he considered them to be only a degenerated variety of *Apis mellifica*. He suggested the probability of their being identical with the "black bees" mentioned by Huber.—Mr. Champion exhibited *Amara alpina* and other beetles from Aviemore, Invernesshire.—The Secretary exhibited some specimens of a Dipterous insect which had been found in the larva state in an old Turkey carpet. The larva was very long, slender, and serpentine; it was white and shining, and had something the appearance of a wire worm, but much longer, and without feet. The name of the insect was not ascertained.—Mr. Bond exhibited specimens of *Argas pipistrelle* parasitic on a bat, and also some *Acari* from a small species of fly; both were from the Isle of Wight.—Mr. Boyd exhibited specimens of *Thecla rubi* from St. Leonard's Forest, differing in certain points from the ordinary type.—Mr. Wormald exhibited a collection of butterflies sent from Japan by Mr. H. S. Pryer.—Mr. W. Cole exhibited some galls of a species of *Cecidomyia*, found in West Wickham Wood.—Mr. F. Smith exhibited some earthen cocoons found on wet mud at Weymouth by Mr. Joshua Brown. They proved to belong to a Dipterous insect (*Macharium maritimum*), one of the *Dolichopida*.—Mr. S. Stevens exhibited specimens of *Asopia nemoralis* from Abbot's Wood, Lewes, and other Lepidopterous insects.—Mr. Butler exhibited a copy of a very rare (if not unique) book, which had recently come into the possession of Mr. E. W. Janson, entitled Lee's "Coloured Specimens to illustrate the Natural History of Butterflies" (London, 1806). He could not find that it had been quoted in any synonymic catalogue, and it contained coloured drawings and diagnoses of nineteen species of butterflies.—The Rev. H. S. Gorham read descriptions of species of Endomycid Coleoptera not comprised in his catalogue, "Endomycici recitati." Also, some remarks on the genus *Helota* (*Nitidulida*), of which he described a new species from Japan.—Dr. Sharp communicated a supplementary paper on some additional Coleoptera from Japan.—Prof. Westwood communicated Descriptions of new species of *Cetonidae*, principally from the collection of Mr. Higgins.—The President announced that the library of the Society would remain for another year at 12, Bedford Row, and it was hoped that by that time some more permanent and suitable place would be obtained for it.—Part III. of the Transactions of the Society for 1874 were on the table.

## PARIS

Academy of Sciences, July 13.—M. Bertrand in the chair.—The perpetual secretary announced the death of M. Angström, and the president made some remarks expressive of the regret of the Academy at the loss they had sustained. The following papers were read:—Observations relating to M. Tacchini's last note and to the recent memoir of M. Langley, by M. Faye. The author gave an extract from Langley's memoir, showing that this observer accepted, with certain restrictions, the cyclone theory of sun-spots.—On chemical actions other than metallic reductions produced in capillary spaces, by M. Becquerel. This is a continuation of the author's researches in electrochemistry.—Observations on the subject of the establishment of an inland sea in Algeria, by M. de Lesseps.—Memoir on the chronological classification of geological formations, by A. E. B. de Chancourtois.—On some applications of Abel's theorem to curves of the second degree relative to the elliptic functions, by M. H. Léauté.—On the observation of a phenomenon analogous

to that of the "goutte noire," by M. Devic.—Observations on the obstacles to be opposed to the attack of vines by Phylloxera, a letter from M. Bourgeois to M. Dumas. The writer made four propositions relating to (1) the direct destruction of the insects; (2) the preservation of isolated stocks; (3) the preservation of a field of vines not attacked; and (4) treatment of a field partially attacked. Several members made remarks on the same subject. M. Elie de Beaumont suggested the use of snow.—Note relating to the viriel of M. Clausius, by M. F. Lucas.—Note relating to the theory of osculatory surfaces, by Mr. Spottiswoode.—Remarks on the pyrheliometric observations of Pouillet, a reply to the criticisms of M. Faye, by M. Duponchel.—On chemical achromatism, by M. Prazmowski. This was a note descriptive of the construction of the photographic objective to be used by M. Jansen for photographing the solar disc.—Second note on the electric conductivity of ligneous bodies, by M. Th. du Moncel.—On indications furnished by conjugate thermometers *in vacuo*, by M. Marié-Davy.—Qualitative research on arsenic in organic and inorganic substances, by MM. Mayençon and Bergeret. The authors have devised a new plan for detecting arsenic (depending upon the action of arsenetted hydrogen on mercuric chloride), which possesses extreme delicacy.—Action of heat on the isomers of anthracene and their hydrides, by M. Ph. Barbier. The author has extended his investigations to the following substances:—the two ditolyls, ethylene and diphenyl mixed, and benzyltoluene. Fritzsche's phosene appears to have been a mixture of anthracene and phenanthrene.—New experiments on human locomotion, by M. Marey.—New experimental researches on inflammation and mode of production of leucocytes of pus, by M. J. Picot. Action of salts of biliary acids, by MM. V. Feltz and E. Ritter.—Observations on the first phases of development of *Pelobates fuscus*, by M. G. Moquin-Tandon. These phases are in the main identical with those of the common toad.—Analyses of the samples of wine exhibited at the exhibition of the Pavillon du Progrès, by M. Ch. Mène.—On globular lightning, by M. Gaultier de Claubry. This was a description of some of the effects of the thunderstorm which broke over Paris on Thursday the 9th inst.

## BOOKS RECEIVED

AMERICAN.—Baird's Annual Record, 1873.—Proceedings of the Boston Society of Natural History, vol. xvi. part ii.—Field Ornithology, comprising a Manual of Instruction for procuring, preparing, and preserving Birds, and a Check List of North American Birds: Dr. Elliott Coues, U.S.A. (Trübner).—The Birds of Florida, Part iii.; C. J. Maynard (Ipswich, U.S.A.).—Bulletin of the Buffalo Society of Natural Science (Warren & Co., Buffalo).—Circles of Deposition of American Sedimentary Rocks: J. S. Newberry.—Theory of Arches: Prof. W. Allan (Van Nostram, N.Y.).—My Visit to the Sun; or, Critical Essays: Laurence S. Benson (J. S. Burton, N.Y.).—Annual Report of the Trustees of the Museum of Zoology, Harvard, Camb. U.S.A. for 1873.—Birds of Western and North-Western Mexico: G. A. Lawrence (Boston Natural History Society).—The Organisation and Progress of the Anderson School of Natural History (Welch, Biglow & Co., Camb. U.S.A.).—Sea Fisheries of the South Coast of New England: Spencer and Baird (Washington).—The Vertebrate Animals of Vineyard Sound: A. E. Verrill and S. J. Smith (Washington).—First, Second, and Third Annual Reports of the United States Geological Survey of the Territories for 1867-69 (Washington).—Geological Survey of Ohio, vol. i. Palaeontology (Columbus).—Reports of the Geological Survey of Missouri, 1853-71 (Jefferson City).—Reports of the Geological Survey of Missouri Iron Ores and Coalfields, 1872 (N.Y.).—Atlas to Geological Survey of Missouri (N.Y.).

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