

SCIENTIFIC SERIALS

Bulletins de la Société d'Anthropologie de Paris, 1871-72.—We find from these reports that the French palæontologists have been unusually active during the last eighteen months in continuing the exploration of the numerous bone-caverns of their country and in testing the accuracy of the older classifications of their remains. M. Barabeau has been examining with great care the Dordogne district, which has become classic ground through the labours of Christie and Dartet. M. Saudon believes that the molars and maxilla recently found at Laugerie-Haute cannot be referred to the true horse—although they may provisionally, like similar remains found by M. Rivière in Italy—be accepted as belonging to some form of *equus*, for he does not think that the horse existed in Europe in pre-historic times. M. Mortillet, in obedience to the suggestions of M. Bertrand, Conservateur du Musée de S. Germain, has drawn up a chart of the palæolithic age in Gaul, the only work of the kind extant: in it are recorded 5 localities in which occur supposed traces of man in the tertiary; 43 alluvial deposits in the quaternary yielding human bones and industrial remains; and 278 caverns containing quaternary fauna with traces of pre-historic man. M. Mortillet thinks that we are no longer justified in assuming with E. Dartet that there was ever a special age of the bear or reindeer, all extinct animals having apparently lived through the whole palæolithic period. Amongst the numerous communications of M. Hamy, we may instance papers on the "Fossil Human Remains of d'Engihoul, near Liège;" "The Anthropology of Cambodia;" "The Quaternary Deposits of cut Silex recently discovered in the Pas de Calais;" "The Existence of Brachycephalic Negroes on the Western Coasts of Africa;" and "The Proportions of the Arm and Fore-arm to the different periods of Life." M. Doullsh, from observations made at the close of 1871, in a bone cavern at Corgnac (Dordogne), believes that he has found incontrovertible proofs that man in the reindeer age had attained the art of *polishing* no less than of cutting stone.—M. Lagardelle communicates through M. Hamy, one of the Secretaries of the Society, some curious information in regard to the habitations of the degraded people known under the names of *Colliberts, hutliers, &c.*, who for many ages occupied the marshy lands of Poitou, near the mouths of the Sèvre, and whose descendants were known till recently as *niolers*. This district was occupied by Gauls before the Norman Conquest, and after that event it became, from its inaccessible character, a place of refuge for fugitives. In the eleventh and twelfth centuries the Colliberts, whose special occupation was fishing, were dependent, as *homines conditionales*, on several religious houses, but were nevertheless left in a state of heathen, almost savage ignorance. Their huts were made of interlaced willow twigs, and their only means of locomotion before the formation of the network of canals, which have proved the chief agents in rescuing them from their isolation, were their long ash stilts and the so-called *niolés*, or light boats from which they took their name. The race is now merged in that of the contiguous *terra firma*.—M. Alph. Milne-Edwards has prosecuted an extensive series of observations on "The Embryology of the Lemurians and the zoological affinities of those animals;" and he finds that the placental system differs so widely from that of the Simiæ, with which they have been supposed to present very close relationships, that he is of opinion the Lemurs should take an intermediate, but wholly distinct, place between monkeys and carnivores.—M. Thorel's medical notes of his observations while serving in the exploring expedition to Meckong, in 1870, afford curious information in regard to the immunity to certain miasmatic affections presented by the people of Cochin China and other parts of Indo-China.—M. Sanson has laid before the Society his views on the Characterisation of Species, which are diametrically opposed to the Darwinian theory of evolution. The earlier numbers of the *Bulletins* for 1872, contain an unusually large proportion of papers on purely anatomical, psychological, medico-legal and similar subjects.—M. Broca considers, in a special monograph, the importance of nasal configuration as a true ethnological character.—M. A. Roujou traces the analogies of the human type with that of the more ancient mammals, and proceeding to the length of concise definition, he fixes the probable appearance of the first lemurians at an epoch very remote from the secondary, and of monkeys—properly so called—before the tertiary, at the beginning of which period he thinks it not improbable that they engendered man.—The second and third numbers of vol. vii. of the *Bulletins* contain the exhaustive Treatise of M. Topinard on the indigenous races of

Australia, with the valuable contributions and discussions in regard to the same subject by MM. Broca, Hamy, and Rochet. These numbers give us a general exposition of the progress and actual position of the science of Anthropology, and of the social advancement of our civilisation and its effect in obliterating ethnological characters and in elevating the lower type.

THE *Lens* for April commences with an analysis of the species of the genus *Amphora*, by Prof. H. L. Smith, in continuation of his *Conspectus of the Diatomacea*, accompanied by three excellent plates, and containing the description of nearly 100 species.—Dr. Danforth, of Chicago, describing "The Cell," develops Dr. Beale's theory respecting the nature of the nucleus, and discusses the action of carmine upon it.—Mr. H. Babcock, "On the Flora of Chicago and its Vicinity," catalogues the graminæ and filices of that place very shortly.—There are also papers by Mr. J. H. Martin, "On the Similarity of various forms of Crystallisation to minute Organic Structures;" and by Mr. E. Colbert, "On the Figure of the Earth, and its Effect on Observations made in the Meridian."—The editor criticises the test employed by a committee of the Royal Microscopical Society of London in their decision respecting the angular aperture of Mr. Tolles's $\frac{1}{10}$ th objective, thinking it unfair.

SOCIETIES AND ACADEMIES

LONDON

Royal Geographical Society, May 12.—Major-General Sir H. C. Rawlinson, K.C.B., president, in the chair.—The paper read was "Journey through Western Mongolia," by Mr. Ney Elias. The distance travelled over was 2,000 miles, accomplished between July 1872 and January 1873. The route from Kalgan (the starting-point in crossing the desert of Gobi by the usual route *viâ* Urga to Kiachta) was westerly to the Chinese frontier town of Kwei-hua, thence north-westerly to the river Onghin, and afterwards again westerly, along the foot of the Khangai Range, to the city of Uliassutai, which his observations showed to be 5,700 ft. above the sea-level. His further journey was impeded by the bands of Mahomedan Mongol rebels, the so-called Dugans, who, although badly armed, struck terror into the Chinese garrisons of the towns, and carried fire and slaughter wherever they went. He narrowly escaped the band, which a few days before his arrival destroyed the city of Kobdo, west of Uliassutai; arriving there, he saw the charred remains of the outer town and the unburied bodies of slaughtered people scattered over the streets. The Chinese garrison still occupied the fort, and received him and his party with kindness. All his endeavours, however, to obtain assistance for his further journey southward and westward to Kuldja were met by steady opposition, and he finally had to cross the frontier to the Russian town of Büsk. The president informed the meeting that Mr. Elias had not only accomplished a wonderful journey over a tract of Central Asia never visited by a European since the times of Marco Polo, but had executed, unaided, a survey of the whole route travelled. His very numerous observations for longitude and latitude had been computed by Mr. Ellis, of the Greenwich Observatory, and those for heights above the sea-level by Mr. Strachan, of the Meteorological Office. For this great service rendered to geographical science, the Council of the Society has just awarded him the Founder's Gold Medal for 1873.

Meteorological Society, May 21.—Dr. J. W. Tripe, president, in the chair. The discussion was resumed on the following questions, which had been submitted to the consideration of the Meteorological Conference at Leipzig in August last:—No. 18: Can uniform times of observation be introduced for the normal observations? Remarks were made by the president, Dr. Mann, Messrs. Glaisher, Symons, Sopwith, Scott, Bicknell, Salmon, and Strachan, as to whether local or Greenwich time should be used, and whether the hours of 9 A.M. and 9 P.M., or 9 A.M., 3 P.M., and 9 P.M. should be recommended to observers. The meeting was of opinion that the hours of observation should be 9 A.M. and 9 P.M., and that local time should be adopted. The next question considered was No. 20: Division of the year for the calculation of mean results. After some discussion Mr. Sopwith suggested that a committee should be appointed to draw up a series of questions on all matters connected with this subject, and that the same be sent to the Fellows of the Society requesting their reply on all or any of the questions; this suggestion was approved of and adopted by the meeting.—A

paper was then read on "Land and Sea Breezes," by Mr. J. K. Laughton, who was of opinion that sufficient attention had not been paid to the subject; and that more careful examination would show that the ordinary recorded theory is not in accordance with the facts observed; that these prove that sea and land breezes are seldom strong where the land is of that arid nature which gives rise to extreme differences of temperature, and that they frequently are strong where, from the verdant nature of the country, the differences of temperature are trifling; also that the sea breeze begins out at sea, and comes slowly in, and that the land-breeze comes, in the first instance, distinctly off the land, sometimes as sharp squalls. The necessary conclusion from these observations is that the breezes are winds of propulsion, not of aspiration; and whilst it seems probable that the propelling-force, in the case of the sea-breeze, is due to the rapid formation of vapour over the sea, the land-breeze may be the reaction, or return of the column of the air which has previously been forced upwards by the sea-breeze. A short paper by Rev. F. W. Stow, on the same subject, was read, giving an account of the observations he had made at Hawsker; after which Mr. R. H. Scott gave a description of a double rainbow observed at Kirkwall.

Institution of Civil Engineers, May 13.—Mr. T. Hawksley, president, in the chair.—The paper read, "On the Delta of the Danube, and the Provisional Works executed at the Sulina Mouth," by Sir Charles Augustus Hartley, was a sequel to a previous communication by the author on March 11, 1862. It described the mutations of the Sulina Bar from 1861 to the present time, and referred to the changes in the Sea outline of the Delta during sixteen years. Reference was made to the enormous growth of the northern part of the Kilia Delta in recent years, due to the greatly augmented volume of water which had lately flowed to the sea by the Ochakoff branch and New Stamboul Mouth; while a diminution in the advance of the southern extremity of the Kilia Delta was assigned to the impoverishment of the old Stamboul branch of the river. These changes, from natural causes, in the relative volumes of water delivered to the sea by the Kilia Mouths, were favourable circumstances in considering the problem of the number of years that would probably elapse before the Sulina Mouth would be absorbed in the shallows of the Kilia Delta. Since 1857, owing to the shoaling of the Toulcha and the St. George's branches, the outflow by the Kilia had increased, so that it now delivered two-thirds of the whole volume of the Danube to the sea. Fortunately for the navigation by the Sulina Mouth, the larger portion of the detritus was transported far to sea, and comparatively little went to swell the shallows of the Kilia Mouths. In the last fifteen years the advance of the 30-foot line of soundings had been strictly confined to the sandbanks facing the mouths of the Kilia, Sulina and St. George, and it was shown that an erosive action had been long at work on the shore line and sea bottom to the north and south of the Sulina Mouth.

Society of Biblical Archæology, June 3.—Dr. Birch, F.S.A., president, in the chair. The following papers were read:—"The Legend of Ishtar descending to Hades." By H. F. Talbot, D.C.L., F.R.S., &c.—In this valuable paper the author translates from the tablets the Goddess's voluntary descent into the Assyrian *Inferno*. In the cuneiform it is called the Land of No Return; and the Lord of Earth gives her a green bough of the *Li*. . . tree to protect her life (comp. Virgil's *Æneid*). Ishtar passes successfully through the seven gates, compelled to surrender her jewels, (1) her crown, (2) her earrings, (3) her head-jewels, (4) her frontlets, (5) her girdle, (6) her finger and toe rings, (7) her necklace. The Lord of Hades seeing her sends his messenger Namtar to greet her. But as she cannot return of her own accord to the upper regions, the heavenly triad Sun, Moon, and *Hea* or *Hu* (Lord of Mysteries) consult, and *Hea* raises a black phantom who performs a juggler's trick before the Lord of Hades; during which he gives to Ishtar a cup full of the Waters of Life, whereby she returns to the upper world, receiving at each Hades-portal the jewels she had been deprived of in her descent. The phantom is rewarded by the most exquisite meats, wines, &c. The Greek Fate *Atrapos* is supposed by the author to mean No Return, and Hades (House of Eternity) is compared with the Hebrew *Ol* and *Bit-Moat* of Job xxx. 23.—"On the Egyptian Preposition," by M. P. Le Page Renouf, F.R.S.L.—"On a Remarkable Babylonian Brick described in the Bible," by Richard Cull, F.S.A.

PHILADELPHIA

Academy of Natural Sciences, February 11.—Dr. Ruschenberger, the president, in the chair. Mr. Thomas Meehan presented an apple, which was borne by a tree at Kittanning, in Pennsylvania, and which tree never produced any flowers in the popular acceptance of the term; but always yielded an abundance of fruit. The specimen furnished a practical illustration of some morphological truths which could not often be demonstrated in the way this afforded the opportunity of doing. It was admitted that a fruit was a branch with its accessory leaves transformed. The apple fruit was made up of a series of whorls of leaves comprising five each. Cutting an apple through we found a series of five formed the carmels containing the seeds. Several series of whorls, very much retarded in development, probably formed the stamens, but this could not be well seen in the apple fruit, as they seemed to be almost absorbed in the corolla series. This was the next in order that appeared in the divided apple—the green curved fibrous line which we find in all apples midway between the "core" and the "rind" is the dividing line between the series which forms the corolla, and the outer series which forms the calyx. In this tree there are no pistils, the series which usually goes to make up this part of the fruit structure being either very rudimentary or entirely wanting. Hence there was no core to the fruit. The result of this want of development was that the usual calyx basin of the apple was in this case occupied by a cavity three-quarters of an inch across. There were no petals; but in place five gland or rather bud-scaletlike processes, at regular distances, on the edge of the green fibrous outline before referred to. The outer whorl, which usually forms the calyx, was almost asepalous, as a mere scarious membrane marked the place where the calyx segments or sepals should have appeared. It was so easy in this specimen to trace the dividing line between the outer or calycine whorl and the inner or corolline whorl, which, uniting and becoming succulent, formed the popular apple fruit, that it was worthy of note in this connection. But the most interesting feature in this specimen was what were probably, from their similarity in appearance, cork cells, formed abundantly on the outside of the apple. It would seem that, with the lack of development in the inner series of whorls necessary to the perfect fruit, those which remained were liable to take on somewhat the character of bark structure.

February 18.—Dr. Ruschenberger, the president, in the chair.—The following paper was presented for publication:—"Description of Mexican Ichneumonidae, Part II," by E. T. Cresson.—Mr. Thomas Meehan presented specimens of leaves of a Begonia on which minute folioles appeared as densely as hair all over the upper surface, while the leaf was on the growing plant. The little growths first appeared as succulent hairs, and these hair-like processes subsequently divided or produced the leafy blades from their apices. Mr. M. remarked that hairs were at any rate structurally but graded thorns, of which bristles were an intermediate stage. Spines often bore leaves, but it was unusual for thorns to do so. It might not be that these leaf-bearing processes were really hairs though they had that appearance.—Mr. Thomas G. Gentry called the attention of the Academy to what he considered to be an interesting case of a change of habits which had recently occurred in the life of an ordinary chickaree, the *Scinus hudsonius* of Pallas. During the early part of last autumn, his attention was called to the fact that the birds in a certain designated locality of Mount Airy, during the hours of the night, were undergoing a system of wholesale destruction, the work of small animals which were supposed to belong to some species of Carnivora. Labouring under this impression, and being desirous of securing a specimen or two, he started for the scene of slaughter, bent upon discovering the name and character of the animal; when within a few rods of the place, the almost deafening noise that greeted his ears, from the tall trees, led him to suspect that all was not right. After reaching the spot, a few moments of anxious waiting sufficed to reveal to him the cause of the noise and the origin of the sacrifice above alluded to; for, sitting upon a twig just above his head, he observed a *chickaree*, holding in its paws a bird which it had captured, and from which it was very contentedly sucking the life current. It is a well-established fact, he further remarked, as far as he had been able to verify it, that the numerous species of Rodents, with but two exceptions at the most, subsist principally or entirely upon vegetable matter, especially the hard parts of plants, such as nuts, bark, and roots. This habit of imitating the propensities of the *Mustelida*, he thought might have arisen

from the habit which some squirrels possess, possibly the one under consideration, of sucking the eggs of birds; the blood-sucking habit he assumed to be an outgrowth from the other. This adoption of another's mode of life by *S. hudsonius*, he thought a discovery of some note, as usurpation of habits, leading to functional and structural changes in an animal's economy, is accounted an element of no mean weight in the development hypothesis, according to the testimony of able writers upon Evolution.—Prof Cope exhibited the cranium of the horned Proboscidian of Wyoming, *Loxolophodon cornutus*, and made some remarks on its affinities (see NATURE, vol. vii. p. 471).

CALIFORNIA

Academy of Sciences, April 21.—Prof. Davidson, president, in the chair.—Dr. Blake read a paper on the connection between the atomic weights of inorganic compounds and their physiological action. In a communication read before the Academy of Sciences of France, February 10, Messrs. Rabuteau and Ducoudray state that the poisonous effects of metals is greater as their atomic weight increases. When the different elements are grouped according to their isomorphous relations, there evidently exists a close connection between the intensity of their physiological action and relative atomic weights, and it is only under such conditions that the statement of Messrs. Rabuteau and Ducoudray is even approximately correct. That no absolute connection exists between the atomic weight of a metal and its physiological action is evident; for instance, the compounds of Beryllium with an atomic weight of 9 are far more poisonous than the salts of silver with an atomic weight of 103. As an example of the connection between the atomic weight and the poisonous qualities of a substance, the following table, drawn up from experiments which have not yet been published, furnishes strong evidence. The experiments were performed on rabbits, a solution of some salt of the metal being injected into the jugular vein.

Name of substance.	Atomic weight.	Quantity required to kill
Lithium	7	40 grs.
Sodium	23	20 "
Rubidium	85	6 "
Cæsium	133	8 "
Thalium	204	3 "

—Mr. Edwards presented a paper on the honey-making ant of Northern Mexico. The community is divided into three classes—the workers, carriers, and the honey-makers. The workers are much larger than the others, and of a black colour; they guard the nest and convey to it the materials from which the honey is made; these they deposit in a leaf over the centre of the nest, and from this leaf it is transported by the carriers to the honey-makers in the interior of the nest. The carriers are much smaller than the workers, and of a light brown colour. The honey-makers resemble the carriers in size and colour, with the exception of the enlarged abdomen. They are found in the centre of the nest, generally at a depth of two or three feet from the surface. They are supported on a sort of web made of closely woven fibres. Each ant occupies a superficial indentation in the web, in which it remains; in fact all locomotion in the honey makers is impossible, as the distended abdomen, which constitutes the honey-bag, is at least twenty times as large as the rest of the body. The honey is of a fine flavour, and much sought after by the natives.

PARIS

Academy of Sciences, May 26.—M. de Quatrefages, president, in the chair.—The Academy proceeded to the election of the candidates to be recommended to the Minister of Public Instruction for the four vacant posts in the Bureau des Longitudes. The following were the final results:—Member representing the Academy of Sciences, 1st line, M. Serret; 2nd line, J. O. Bonnet; Member of the Marine Department, 1st line, M. Mouchez; 2nd line, M. Bouquet de la Grye; Member of the War Department, 1st line, M. Perrier; 2nd line, M. Blondel; Geographical Member, 1st line, M. Janssen; 2nd line, M. d'Abbadie. The following papers were read:—On the assimilability of super-phosphates, by M. Joulie. The author found that "super-phosphate" consists of the following four bodies:—Free phosphoric acid, dihydric calcic phosphate, hydric dicalcic phosphate, and tricalcic phosphate. The first three of these can be taken up by plants; hence he decides, (1) that the amount of phosphoric acid soluble in water is not a true estimate of the value of the

manure, but (2) that the amount soluble in alkaline ammoniac citrate is; he therefore recommends the latter as the proper reagent for such estimations.—Rectification of a portion of the communication of M. Munk concerning the discovery of lunar variation, by M. L. A. Sédillot. This paper related to the disputed passage of Aboul Wefa.—On the calculus of the luminous phenomena produced in the interior of transparent media having a rapid motion of translation in those cases where the observer partakes of that motion, by M. J. Boussinesq.—On the electric balance and on electrostatic phenomena, by M. P. Volcipelli.—Researches on the electricity produced by mechanical action, by M. L. Joulie.—On the conditions of maximum magnetic effect in galvanometers and electro-magnets, by M. Raynaud.

DIARY

THURSDAY, JUNE 5.

LINNEAN SOCIETY, at 8.—On the Plants of Kilimanjaro: Dr. Hooker, F.R.S.—On the Lecythidaceæ: John Miers, F.R.S.
 CHEMICAL SOCIETY, at 8.—On the Dioxides of Calcium and Strontium: Sir John Courcy, Bart.—On Iodine Monochloride: J. B. Hannay.—A new Ozone Generator will be exhibited by Mr. T. Willis.
 ROYAL INSTITUTION, at 3.—Light: Prof. Tyndall.

FRIDAY, JUNE 6.

ROYAL INSTITUTION, at 9.—Lecture: Dr. Odling.
 GEOLOGISTS' ASSOCIATION, at 8.—Ammonite Zones in the Upper Chalk of Margate, Kent: F. A. Bedwell.
 ARCHAEOLOGICAL INSTITUTE, at 4.
 GRESHAM LECTURES, at 7.—On Headaches: Dr. E. Symes Thompson.

SATURDAY, JUNE 7.

ROYAL INSTITUTION, at 3.—The Historical Method: John Morley.
 GRESHAM LECTURES, at 7.—On Narcotics and Sedatives: Dr. E. Symes Thompson.

MONDAY, JUNE 9.

GEOGRAPHICAL SOCIETY, at 8.30.

TUESDAY, JUNE 10.

PHOTOGRAPHIC SOCIETY, at 8.—On Experiments with three wet processes: Jabez Hughes.—Notes on the Photo-collotype process: Capt. J. Waterhouse.—On some early Photo-engravings: W. H. Fox Talbot, F.R.S.

WEDNESDAY, JUNE 11.

GEOLOGICAL SOCIETY, at 8.—On the Nature and probable Origin of the superficial Deposits in the Valleys and Deserts of Central Persia: W. T. Blanford.—On *Caryophyllia Bradiei*, Milne-Edwards, from the Red Crag: Prof. P. Martin Duncan, F.R.S.—On the Cephalopoda-bed and the Oolite Sands of Dorset and part of Somerset: James Buckman.—*Cetarthrosaurus Walkeri*, Seeley, an Ichthyosaurian from the Cambridge Upper Greensand: H. G. Seeley.
 ARCHAEOLOGICAL ASSOCIATION, at 8.
 GEOLOGISTS' ASSOCIATION.—Excursion to Brighton.

THURSDAY, JUNE 12.

ROYAL SOCIETY, at 8.30.
 SOCIETY OF ANTIQUARIES, at 8.30.
 MATHEMATICAL SOCIETY, at 8.—Some general Theorems relating to Vibrations: Hon. J. W. Strutt.—Invariant conditions of three and four concurrence of three Conics: J. J. Walker.—Locus of the point of concourse of tangents to an epicycloid inclined to each other at a constant angle: Prof. Wolstenholme.

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ERRATA.—P. 85, col. 1, line 18 from bottom, for "disassociates" read "dissociates;" col. 2, line 14 from top, for "exact" read "&c.;" col. 2, line 28 from top, after "acid" insert "with tartaric acid;" col. 2, line 36 from bottom, for "solution." After boiling with acid a notable," read "solution after boiling with acid. A notable."