Samoa, a distance of 1,360 miles. Half of the party on board perished from want of food and water. In both these instances the drifting was from east to west, before the trade winds. A far more remarkable event occurred in Jan. 1858, during the prevalence of the violent easterly winds, when a numerous family of adult natives drifted from Fakaofo, in the Union group, north of Samoa, to an uninhabited spot known as Nassau Island; thence to Palmerston's Island; and finally to Maugaia, where Mr. Gill lived; altogether a distance of more than 1,200 miles in a south-easterly direction. (4) The colour, hair, general physiognomy, habits, character, and especially the language, of the Polynesians clearly indicate a Malay origin. This could not be accidental. Mr. Gill's impression was that long ages ago the progenitors of the present race entered the Pacific from the S.E. fork of New Guinea, but were driven eastward by the fierce Negrito race. The greatest distance from land to land, as they pressed eastward, would be from Samoa to the Hervey group, about 700 miles, which had been successfully performed by natives in their fragile barks under Mr. Gill's own observation.

In the subsequent discussion Prof. Rolleston expressed his opinion that there was little difference between Papuans and Australoids; the superficial differences were outweighed by great radical points of resemblance. He referred to the Rev. S. J. Whitmee's paper in the *Contemporary Review* for February 1873 as of the highest value on this question of the origin of the races of the Polynesian islands. This opinion was diametrically opposed to Mr. Wallace's.—Dr. Hector described the three chief race-types among the Maories. The first was rarely met with except in the extreme south; it was of the same type as the aborigines of the Chatham Islands, with a distinct dialect, only comprehensible by old Maories. They had a sloping forehead and strong muscular ridges on their skulls, which were very distinct from the great majority of Maori skulls. The other two types were now pretty well intermixed. One was more common in the northern extremity of the Northern Island, having yellow shock hair and high cheek-bones. The third was the ordinary Maori. He mentioned the fact that the Maories had a much better knowledge of the natural history of their country than any people he had ever heard of. The older Maories had noticed and had distinct names for nearly all their plants, not merely those that were of use; and the same names, with slight modifications, were universally in use throughout a country a thousand miles in length. They had generic names by which they grouped plants according to their affinities in a way impossible to most people who were not educated botanists. The Veronicas of New Zealand appeared under a very great variety of external forms, yet they were all identified by one name.—The Rev. W. Gill, in closing the discussion, said that difference in shade of colour was not to be relied upon as a test of difference of race; for he had seen the most intense blackness produced in Polynesia in those of the poorer classes who habitually spent much time in salt water, while the wealthier classes remained of a much lighter hue.

General H. B. Carrington, of the United States army, read a very interesting paper *On the Indians of the North-Western States*.

The Anthropological Department has been one of the best sustained this year, a result attained by its inclusiveness of a wide range of subjects relating to the history of mankind, and by reason of the high authority of many who addressed the department on their respective studies. The President showed himself a worthy leader, illuminating most of the subjects discussed and fostering discussions which were interesting alike to students and to the general public.

SCIENTIFIC SERIALS

American Journal of Science and Art, September.—The original articles are: On the formation of hail in the spray of the Yosemite Fall, by W. H. Brewer. The paper describes a visit paid to the fall in April last. The amount of water passing over the fall was estimated at 250 or 350 cubic feet a second, and the height is 1550 feet. In the spray, which stung the hands and faces of the visitors, hail or ice-pellets were found. "It will be noticed that at the time when this hail was observed, the sheet was in the full blaze of the sun from top to bottom. . . . The air near was of a temperature of 70°. Prof. Le Conte has suggested that perhaps the cooled air within the sheet is somewhat compressed and condensed in the base of the fall, and when liberated just outside by its expansion, freezes a part of the spray."—On Southern New England during the melting of the great glacier, by J. D. Dana: Part I. (we reserve our notice till the completion of the article).—On the mechanical work done by a muscle before exhaustion, and on the "law of fatigue," by the Rev. S. Haughton, M.D. Dr. Haughton announces his aim is be to show (1) That both series of experiments made by Prof. Nipher (given in the February number) are a valuable contribution to the facts of animal mechanics; (2) That they are not only consistent with "the law of fatigue" proposed by Dr. Haughton, but illustrate both that law and his "Coefficient of Refreshment;" (3) That Prof. Nipher's discussion of his own valuable experiments is worthless, as it is based on an empirical formula, which has no meaning and leads to no further consequences: (4) That the law of fatigue, which explains not only Prof. Nipher's experiments, but so many other experiments also, is entitled to be received provisionally as a law of animal mechanics, and followed up by deduction to its legitimate conclusions.—Earthquake of December 1874, by Prof. D. S. Martin. "The general phenomena presented nothing peculiar."—On some interesting equine calculi, by R. H. Chittenden.—Results of dredging experiments off New England coast, by A. E. Verrill. Four pages of tables are given, and a note is added on methods of preserving specimens. Picric acid was found to be valuable.—On the passage of two bolides in 1872 and 1874 over Middle Kentucky, by J. Lawrence Smith.—Notes on the gases accompanying meteorites, by Prof. J. W. Mallett. The purpose is to question whether Prof. Wright has sufficient evidence for his conclusion, "the stony meteorites are distinguished from the iron ones by having the oxides of carbon, chiefly the dioxide, as their characteristic gases instead of hydrogen."—On a new vertical lantern galvanometer, by Prof. G. F. Barker. The arrangement is for demonstration to a large audience, deflections obtained by induction currents, thermo-currents, voltaic currents, &c.—On another gigantic Cephalopod (*Architeuthis*) on the coast of Newfoundland, December 1874, by A. E. Verrill. The total length is estimated at forty feet.

THE *Journal of the Chemical Society* (June 1875) contains in detail Prof. Clerk-Maxwell's paper On the dynamical evidence of the molecular constitution of matter, which was duly published in NATURE. The other papers in this part are:—Researches on the action of the copper-zinc couple on organic bodies, by Dr. J. H. Gladstone and A. Tribe. The authors in this (eighth) paper treat of chloroform, bromoform, and iodoform.—On the action of nitrosyl chloride on organic bodies (second paper), by W. A. Tilden; the action on turpentine oil is considered.—A note by Prof. Story Maskelyne on the crystallographic characters of nitrosoterpene is given as appendix to the last paper.—Dr. H. Armstrong contributes a note on isomeric change in the phenol. series, which gives new proof of the energy and unceasing attention this gentleman bestows upon his interesting researches.—The last paper is a note on the effect of passing the mixed vapours of carbon disulphide and alcohol over red-hot copper, by Th. Carnelley. It was found that the following bodies were formed: $CH_3.COH$, COS (carbon oxysulphide!) C_2H_4, C_2H_2, CH_4, and H, and neither H_2S nor SO_2. The copper is superficially converted into sulphide, and amorphous carbon is deposited.

Zeitschrift der Oesterreichischen Gesellschaft für Meteorologie, Aug. 1.—This number contains the concluding part of Herr Wilczek's paper on the calculation of the arithmetical mean of constant quantities. Also an account, by Herr von Jedina, of a cyclone encountered by the corvette *Helgoland* in the North Atlantic, remarkable for the steadiness with which the wind blew from east at its commencement, the great expansion of the front in comparison with the rear, and the slow rise of the barometer after passing the centre.—Among the Kleinere Mittheilungen is a notice of the late Dr. Theorell, and a paper by Herr C. Braun, on the theory of storms.

Rendiconto delle Sessioni dell' accademia delle scienze dell' istituto di Bologna.—The longer papers read at the Academy during the academical year 1874-5 were twenty-nine in number, besides numerous notes and memoirs of smaller interest. We note the following, as of special interest to our readers:—On some phenomena consequent upon contusions of the abdomen and of the spine, by Dr. P. Loreta.—On some argillaceous slate of Miocene origin, by G. A. Bianconi.—Several papers by Prof. F. Selmi, on researches made on poisonous alkaloids, their differences in properties, their determination when mixed with others in organic matter and with innocuous alkaloids,

&c.—Helminthological observations by Dr. Ercolani, on dimorphisms, on *Filaria immitis*, and on a new species of dog Distoma.—Anatomical description of the eye of the European mole, by Dr. Ciaccio.—On the organisation of the brain of Eolidida, by Dr. Trinchese.—On the changes of form of *Amœba limax*, by the same.—On a non-microscopic new and rare parasitic fungus, which is developed on the larva of a living cricket, by G. Bertoloni.—Analytical remarks on some theorems of Feuerbach and Steiner, by Prof. E. Beltrami.—On the continuity of feeling, by Dr. D. C. Biagi.—On the reasons of the low statures which were generally observed amongst the conscripts of the last decennium in some communities in the neighbourhood of Bologna and other districts of Italy, by Dr. P. C. Predieri.—New observations on the minute structure of muscular fibre, by Dr. Ercolani.—Proofs for the contemporariness of the glacial epoch with the Pliocene period at Balerna and at Monte Mario, on the Rhine, by G. A. Bianconi.—On the effects of electric sparks on phosphorus in hydrogen, in nitrogen, in ammonia, and in muriatic acid; and on the effects of electric currents on water, on sulphuric acid, on alcohol, and on bisulphide of carbon, by Dr. Santagata.—Researches on capillary tubes, by Prof. Villari.

Sitzungsberichte der naturwissenschaftlichen Gesellschaft Isis in Dresden, October to December, 1874.—The meetings of this society are divided into five classes, besides general meetings, viz., one for mineralogy and geology, one for prehistoric archæology, one for chemistry, physics, and mathematics, and one each for botany and zoology.—The more important papers read in the different sections during the last three months of 1874 were:—In the mineralogy and geology class: On a peat-like formation occurring at Lindenau, near Leipzig, containing a great number of beetles, one or two species of which are now extinct, by Von Kiesenwetter. On a number of minerals collected during a tour in Saxony, by E. Zschau. On the occurrence of calc-sinter near Quedlinburg, by Herr Ackermann.—In the botany class: On hedge plantation in Australia, by W. Ferguson. On the culture of plants in rooms, particularly of Palmæ, by Adolph Petzold. Report of the results of botanical excursions made during 1874, by A. Voigt.—In the zoology class: Remarks by Th. Kirsch, on "Darwinism and the Researches of Cuvier and Newton," a work lately published by Herr Wiegand.—On Haeckel's calcareous sponges and his Gastræa theory, by Herr Ebert.—In the archæology class: Report on the Archæological Congress at Stockholm, by Dr. Mehwald. On some flint implements from the cave near Rochefort, by Dr. Geinitz. On a piece of reindeer horn upon which rough drawings of horses are visible, and which was found near Thayingen, in Switzerland, by the same.—In the physico-chemical class:—On ozone, by Dr. Schürmann, a highly interesting and elaborate paper; the author gives a detailed account of the history of ozone, and then speaks of its properties, preparation, reactions, presence in the atmosphere, action on the animal organism, and thoroughly exhausts the subject. On tables for barometrical measurements of heights, by Prof. Neubert. Meteorological phenomena observed at Dresden during 1874, by Herr Fischer.—At the general meetings, a paper on the earthquakes of the sixteenth and seventeenth centuries was read; the others being all of minor interest.

SOCIETIES AND ACADEMIES

PARIS

Academy of Sciences, Sept. 13.—M. Frémy in the chair.—The following papers were read:—A note by M. Faye relating to the approaching eclipse of the sun.—M. Bertrand then made some remarks on the paper read at the last meeting by M. Bienaymé.—Report on a memoir by M. Lefort, entitled "Critical examination of the basis of calculation usually adopted to appreciate the stability of metal bridges with straight prismatic beams, and propositions for the adoption of a new basis."—Report on M. Boussinesq's paper on the theory of flowing waters.—Memoir on the observations made at Peking of the Transit of Venus, by Mr. J. C. Watson, chief of the American expedition.—A note on the greasy matter in the grain of the oil-tree of China, by M. S. Cloez.—On the development of Heteropoda, by M. H. Fol.—On the migrations and metamorphoses of marine endoparasitic Trematoda, by M. A. Villot.—On some reactions of hæmoglobine and its derivatives, by M. C. Husson.—On the probable origin of the two hailstorms observed on July 7 and 8, in some parts of Switzerland and the South of France, by M. D. Colladon.—On the non-regeneration of the crystalline lens in man and in rabbits, by M. J. Gayat.

VIENNA

K.K. Geologische Reichsanstalt, April 6.—On Miocene chestnut trees, by O. Heer.—Diallogite after manganese blende and barytes; pseudomorphs after fahl-ores of Przibram, by Ed. Döll.—On the occurrence of native gold in the mineral shells of Verespatak, by F. Posepny.—On the Culm flora of the Moravian-Silesian roofing slates, by D. Stur.

April 20.—On remains of *Ursus spelæus* from the cave of Igritz, by F. von Hochstetter.—On the meteorite of Lancé, by R. von Drasche.—On a geological detailed map of the surroundings of the Seisser Alp and of St. Cassian, by E. von Mojsisovics.—On a map of the upper Vilnöss and the lower Enneberg valleys, by R. Hörnes.—Geological report from the investigation district of the Oetz-valley group, by G. A. Koch.

May 4.—Presentation of a new special map of the Austro-Hungarian Monarchy, F. v. Hauer.—Characteristics of some minerals occurring on the Przibram ore deposits, by F. Babánek.—Report by Dr. E. Tietze from his travels in Persia.—On a new fossil resin from the Bukowina, by J. von Schröckinger.—On *Cervus megaceros* from Nussdorf, by Dr. F. von Hochstetter.—On a human cranium found in the diluvial Loess of Manners-Porf, by Dr. J. Woldrich.—On Noric formations in Transylvania, by E. von Mojsisovics.—On the phosphorites of the Lavant valley, by H. Wolf.

GÖTTINGEN

Royal Society of Sciences, July 10.—At this meeting of the Society the following papers were read:—On the electric elementary laws, by Herr Riecke.—A note on the toxicological action of phenols, in particular of thymol, by Th. Husemann.—On Rötteken's eye of Actinia, by Dr. Hub. Ludwig.—A note by Herr Fromme on the maximum of temporary magnetism in soft iron.—On the potential function in space extended in several directions, by M. Jouelli.

BOOKS AND PAMPHLETS RECEIVED

BRITISH.—The Royal Tiger of Bengal: Dr. J. Fayrer, M.D., F.Z.S. (Churchill).—Jummoo and Kashmir Territories. A Geographical Account, by Frederic Drew, F.R.G.S., F.G.S. (E. Stanford).—Proceedings of the Berwickshire Naturalists' Club.—Brande and Cox's Dictionary of Science, Literature, and Art. 3 vols., new edit. (Longmans).—Further Researches in the Mathematical Science, by the author of "The Two Discoveries" (Bridgewater, Pine).—Bristol and its Environs (Bristol: Wright and Co.)—The Geology of British Guiana: C. S. Brown, F.G.S., and J. G. Sawkins, F.G.S, (Longmans).—A Manual of Mollusca: S. P. Woodward, A.L.S, F.G.S. (Lockwood).—The Native Races. Vol. iii.: Hubert Howe Bancroft (Longmans).—Tapeworms: T. Spencer Cobbold, M.D., F.R.S, F.L.S. (Longmans).—An Introduction to Animal Physiology: E. Tully Newton, F.G.S. (Murby).—The Abode of Snow: Andrew Wilson (Blackwood).—Quarterly Journal of the Geographical Society (Longmans).—Journal of the Scottish Meteorological Society (Blackwood).

COLONIAL.—Centrifugal Force and Gravitation. Six parts: John Harris (Montreal).—The Immortality of the Universe: J. A. Wilson (Melbourne, G. Robertson).—Report of the Meteorological Reporter of Bengal.—Report of the Nidnapore and Burdwan Cyclone.—Magnetical and Meteorological Observations at the Magnetic Observatory, Toronto, Canada, 1841 to 1871 (Toronto: Copp, Clark, and Co.)

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