

contemporary with it. The electrical change may therefore so far as concerns the time at which it occurs in muscle, be immediately connected with that sudden change of the elastic properties of muscle of which the contraction is the sign.

The author exhibited at the Society photographs in proof of the facts above stated. Further details, particularly those relating to the character of the "electrical response" to instantaneous stimulation, for which the photographic method of recording the movements of the capillary electrometer on a pulley moving surface has afforded new facilities, will be the direct of a later communication.

**Anthropological Institute, May 13.**—Dr. J. G. Garson, Vice-President, in the chair.—Mr. Francis Galton exhibited a new instrument for measuring the rate of movement of the nervous limbs. The method adopted was explained by referring to the action of a spring measuring-tape. When the end of one of these is pulled out and then let go, it springs sharply back, the tape running cleanly through a slit. If it runs back more quickly than the hand could follow it, then, if the end of the tape be retained in the hand that gives the blow, the tape will run through the slit at the exact rate at which the blow is given. The hand need not be near the tape; it may be connected with it by a long thread, and the instrument will thus be protected from injury. The thread, during part of its course, is arranged to travel vertically, and passes through a small inverted cone which is fixed to it; it then passes loosely through a cylindrical bead of white ivory, the lower end of which rests on the base of the cone. When the moving thread is suddenly arrested, the bead is tossed up to a height dependent on the velocity of the thread at the time and place when it was stopped. The momentary pause of the white bead when it ceases to descend, and before it begins to descend, enables the height it is attained to be read off upon an appropriate scale, which gives at how many feet per second the thread was moving at the time it was checked.—Dr. G. W. Leitner read a paper on the ethnographical basis of language, with special reference to the languages and language of Hunza. The Hunzas are nominal Mohammedans, and they use their mosques for drinking and dancing assemblies. There is little restriction in the relation of the sexes, and the management of the State, in theory, is attributed to fairies. No war is undertaken unless the fairy gives the command by beating the sacred drum. The people are not true Mohammedans, but represent what is still left of the doctrine of the Sheik-ul-Jabl, or the Ancient of the Mountain, the head of the so-called Assassins. The language of the Hunzas is one of the most primitive, and has not yet emerged from the state in which it is impossible to have such words as "head," as distinguished from "my head," or "thy head," or "his head"; for instance, *ak* is "my name," and *ik* "his name." Take away the pronominal sign, and *k* alone is left, which means nothing. *Aus* is "my wife," and *gus* "thy wife." The *s* alone has no meaning, and in some cases seemed impossible to arrive at putting anything down correctly; but so it is in the initial stage of a language. In the Hunza language that stage is important to us as members of theryan group, as the dissociation of the pronoun, verb, adverb, and conjunction from the act or substance only occurs when the language emerges beyond the stage when the groping, as it were, of the human child between the *meum* and *tuum*, the standard second persons, approaches the clear perception of the other world, the *suum*, the third person.—Mr. A. P. Goodwin read some notes on the natives of the interior of New Guinea, and exhibited a fire-stick.—Mr. G. F. Lawrence exhibited two snails from the Thames.

**Geological Society, May 21.**—Dr. A. Geikie, F.R.S., President, in the chair.—The following communications were read:—On some Devonian and Silurian Ostracoda from North America, France, and the Bosphorus, by Prof. T. Rupert Jones, F.R.S. After the reading of this paper Dr. Hinde said he wished to express the obligations of geologists to Prof. Jones for the excellent work which he had done amongst the Entomologists; and particularly on the present occasion, for the clear paper in which he had explained the wide distribution of some of the species. The President alluded to the long years of tireless labour which Prof. Jones had bestowed on these minute fossils, and to the interesting results he had obtained from them.—On the age, composition, and structure of the plateau-gravels of East Berkshire and West Surrey, by the Rev. Dr. A. Irving.

—Further note on the existence of Triassic rocks in the English Channel off the coast of Cornwall, by R. N. Worth.—On a new species of *Coccodus* (*C. Lindströmi*, Davis), by J. W. Davis.

## PARIS

**Academy of Sciences, May 27.**—M. Hermite in the chair.—Note on the works of M. Louis Soret, by M. A. Cornu.—On the recent work done in Algeria, by M. J. Janssen (see Our Astronomical Column).—On meteorological observations made at mountain stations in Europe and the United States, by M. H. Faye. The author discusses some observations of temperature at various altitudes during cyclones and anticyclones, and the conclusions arrived at by M. Hann at Vienna, and Prof. Hazen in the United States, with respect to the variations found.—On the Turonian flora of Martigues (Bouches-du-Rhône), by M. A. F. Marion.—On the automatic resolution and integration of equations, by M. H. Parenty. An extract of a memoir presented by the author is given.—On the nutation of the axis of the earth, by M. Folie.—On the theory of heat, by M. Appell.—On the elliptical double refraction of quartz, by M. F. Beaulard.—On the conductivities of compounds of ammonia and aniline with the oxybenzoic acids, by M. Daniel Berthelot. One circumstance worthy of attention is that, in spite of the difference of conductivities of the three oxybenzoic acids, the conductivity of the mixture of equivalent parts of each acid and ammonia is almost the same for the three isomerides as for benzoic acid. The author has previously called attention to a similar fact in the case of salts of sodium. It is also noted that the conductivities of ammonium salts are superior to those of the corresponding salts of sodium.—Experiments on magnetization by single and double touch, by M. C. Decharme.—Researches on the dispersion of organic compounds (alcohols of the fatty series), by MM. Ph. Barbier and L. Roux. The authors show—(1) In the alcohols of the fatty series that they have examined, the dispersive powers are continuous functions of the molecular weights, and, contrary to what occurs in the aromatic series, the dispersive powers increase with increase of molecular weight. (2) The long-chain isomeric alcohols, primary and secondary, have sensibly the same dispersive power and obey the same laws; but the primary alcohols studied, other than normal, possess less dispersive powers, without, however, departing far from the values shown by long-chain alcohols. (3) The abstraction of hydrogen is accompanied by a considerable increase in the dispersive power.—M. Ed. Grimaux discusses the formula and reactions of homofluorescein.—On the employment of artificial sea-water for the preservation of marine animals, particularly oysters, in great aquaria, by M. Edmond Perrier. The solution recommended contains 81 grams sodium chloride, 7 grams magnesium sulphate, 10 grams magnesium chloride, and 2 grams potassium chloride, dissolved in 3 or 4 litres of water.—Observations on submarine vision, made in the Mediterranean by means of a diving apparatus, by M. H. Fol.—Two new hermaphrodite *Pelicypodæ*, by M. Paul Pelseneer.—On the chemical examination of mineral waters from Malaysia; the formation of tin ore, note by M. Stanislas Meunier. An incrustation from the hot spring of Azer-Panas possesses the following composition:  $\text{SiO}_2$ , 91.8;  $\text{H}_2\text{O}$ , 7.5;  $\text{SnO}_2$ , 0.5;  $\text{Fe}_2\text{O}_3$ , 0.2; and traces of alumina. This is the first instance of the present formation of a tin-ore.—Observations on the structure of some ferruginous deposits of the Secondary rocks, by M. Bourgeat.—Discovery of a Turonian flora in the neighbourhood of Martigues (Bouches-du-Rhône), by M. G. Vasseur.—On the employment of copper salts as a remedy for the potato-disease, by M. Aimé Girard. The author demonstrates that a solution of sulphate of copper used as a preventive of the disease is very efficacious, and results in a gain in the quantity of the crop such as more than pays for the expense of treatment. Even when used purely as a curative agent, the yield of healthy potatoes is increased by 20.2 to 22.9 per cent.

## BERLIN.

**Meteorological Society, May 5.**—Prof. Schwalbe, President, in the chair.—Dr. Kiewel spoke on the diurnal periodicity of the wind with special reference to Dr. Sprung's theory of the rotation of its direction. It appeared from his investigation that in addition to the influence of the sun's radiation, the variations of barometric pressure also produce a distinct effect, as also does the difference in the rate of the wind in the upper and lower layers of the atmosphere. A discussion followed, in which Dr.