

The compound molecule explanation is a good working hypothesis, which I think may account for the facts, while it does not postulate the rather heroic alternative of calling into existence eight or nine new elements to explain the phenomena. However, I submit it only as an hypothesis. If further research shows the new element theory is more reasonable, I shall be the first person to accept it.

Neither of these theories agrees with that of M. Lecoq de Boisbaudran, who also has worked on these earths for some time. He considers that what I have called old yttrium is a true element, giving a characteristic spark spectrum, but not giving a phosphorescent spectrum *in vacuo*. The bodies giving the phosphorescent spectra he considers to be impurities in yttrium. These he says are two in number, and he has provisionally named them $Z\alpha$ and $Z\beta$. By a method of his own, differing from mine, M. de Boisbaudran obtains fluorescent spectra of these bodies; but their fluorescent bands are extremely hazy and faint, rendering identification difficult. Some of them fall near lines in the spectra of my G β and G δ . At first sight it might appear that his and my spectra were due to the same bodies, but according to M. de Boisbaudran the chemical properties of the earths producing them are widely distinct. Those giving phosphorescent lines by my method occur at the yttrium extremity of the fractionation, where his fluorescent bands are scarcely shown at all; whilst his fluorescent phenomena are at their maximum quite at the terbium end of the fractionation, where no yttrium can be detected even by the direct spark, and where my phosphorescent lines are almost absent.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE

CAMBRIDGE.—Girton College has withdrawn from the arrangement by which it was hoped that a united scholarship for men and women might be established in geology and palæontology out of the Harkness fund. The council of Girton do not consider that the scheme proposed fulfils the essential condition of placing students of Girton and Newnham on the same terms as members of the University. A scheme has consequently been propounded for men alone, open to B.A.'s of not more than four years' standing. The electors are to be the Vice-Chancellor, the Woodwardian Professor, the Examiners in Geology in the Natural Sciences Tripos for the current and the preceding year, and an additional elected examiner. The electors are to take any steps they think desirable to ascertain the qualifications of candidates, and in making the award they are to have regard to proficiency in geology and palæontology, and to promise of future work. One scholar is to be elected annually; but in case no person shall be deemed worthy of election, the income for the year is to go to a reserve fund, to be given, when advisable, to scholars to aid them in prosecuting geological or palæontological researches.

The acceptance of the John Lucas Walker Studentship for the furtherance of original research in pathology, which has been offered to the University by the Attorney-General, is to be voted on in the Senate to-day. The amended regulations provide that the studentship shall be usually tenable for three years, with power of further prolongation for two years more when exceptionally valuable work has been done by the student. The fund, consisting of about 8300*l.* 4 per cent. debentures, is to be managed by the Professor of Pathology for the time being, the Professors of Physic and Physiology, and the President of the London College of Physicians. The studentship is not to be awarded by competitive examination, but any other mode of ascertaining qualifications may be taken. After full announcement of a vacancy, the Professor of Pathology is to nominate the best qualified candidate, but the other electors may overrule the nomination if they are unanimous in favour of some other candidate. The student shall not necessarily be a member of Cambridge University, and may be of either sex. No occupation interfering with pathological research may be followed by the student, who is also to vacate his studentship if elected to a professorship or fellowship. At least three terms of study are to be pursued at Cambridge. Exhibitions or prizes not exceeding 50*l.* may from time to time be awarded by the managers to any person, except the student for the time being, in respect of any essay, discovery, or meritorious service connected with or conducing to the science of pathology, and grants may be made for the furtherance of original research in the science.

The amended regulations for the Mechanical Sciences Tripos also come to a vote to-day.

The Senate has accepted the subscription of 500*l.* offered through Prof. Newton to enable the University to become a Governor of the Marine Biological Association.

The following new appointments of electors to various Professorships have been made: Botany, Mr. Thiselton Dyer; Political Economy, Right Hon. A. J. Balfour, M.P.; Experimental Physics, Dr. D. MacAlister; Downing Professorship of Medicine, Dr. A. Macalister; Mental Philosophy and Logic, Prof. A. Marshall; Surgery, Dr. A. Macalister. The remaining appointments are re-elections.

SCIENTIFIC SERIALS

American Journal of Science, February.—Kilauea after the eruption of March 1886. Under this general heading are grouped three separate papers, disposed in chronological order, describing the appearance of the volcano at different times since the great outburst of last March. The first is a communication to Prof. W. D. Alexander, Surveyor-General of the Hawaiian Islands, by J. S. Emerson, assistant in the Survey, dated August 27, and embodying a series of observations ranging from March 24 to April 14. This paper is illustrated by a plate showing the crater and new lake drawn to a scale of 1 : 20,000. The second, by L. L. Van Slyke, Professor of Chemistry, Honolulu, describes the general appearance of the volcanic district during the month of July, when considerable changes had already occurred, including a general upheaval in the centre of Halema'uma'u, and the reappearance of liquid lava in three different places. The third comprises a report to Prof. Alexander by Mr. Frank S. Dodge, on the survey of Kilauea in the last week of September and the first of October, with a plate of the crater on a scale of 1 : 6000. This observer expects that perhaps in a few months the great central pit will again fill up and overflow, as it did prior to the last eruption.—Volcanic action, by James D. Dana. The general question of igneous disturbances is discussed in connection with the recent eruptions of Kilauea, Vesuvius, and Tarawera. The author's conclusions on the causes of these phenomena, as summed up in his "Manual of Geology" (1863), are mainly confirmed, being attributed to the hydrostatic pressure of the column of lava; the pressure of vapours escaping in underground regions from the lavas, or produced by contact with them, acting either quietly or catastrophically; and the pressure of the subsiding crust of the crust forcing up the lavas in the conduit.—On the Coahuila meteorites, by Oliver Whipple Huntington. It is shown that the assumed new meteorite discovered near Fort Duncan, Maverick County, Texas, and recently described by Mr. W. E. Hidden, is really one of the "Coahuila irons," described by J. Lawrence Smith, and supposed to belong to one fall, although found on the opposite side of the Rio Grande from Maverick County.—A new rhizomatous Medusa from New England, by J. Walter Fewkes. This is a large acraspedote jelly fish, not only new to New England, but also unlike any yet captured on the Atlantic coast of North America. It was captured in September 1886 in New Haven harbour, and is allied to a common species found on the west European seaboard, *Pilema* (*Rhizostoma*, auth.) *octopus*, Haeck., and to *P. pulmo* of the Mediterranean.—A short study of the atmosphere of β Lyræ, by Orray T. Sherman. The author's observations lead to the conclusion that in stars known to possess a spectrum comprising bright lines, these lines, while persistent in place, are not persistent in intensity. Comparing Lockyer's result in the study of the atmosphere with his own, he draws a general conclusion regarding the condition of the stellar atmosphere, describing it as consisting of an outer layer of hydrogen positively electrified, an inner layer of oxygen negatively electrified, and between them a layer of carbon mingling on its edge with the hydrogen. The electric spark passing through the mixture forms the hydrocarbon compound, whose molecular weight carries it into the oxygen region where combustion ensues with the formation of carbonic acid and aqueous vapour, both of which descending under the influences of their molecular weight are again dissociated by internal heat, and return again to their original positions.—Phenacite from Colorado, by Samuel L. Penfield, with notes on the locality of Topaz Butte, by Walter B. Smith. Some interesting facts are communicated with regard to the crystallisation of this remarkable mineral, the occurrence of which in the United States (Pike's Peak, El Paso County, Colorado), was determined by Messrs. Cross and Hillebrand.