of America that the calcareous fauna of Beekmantown migrated to the submarine trough in the typical Champlain region, and through Newfoundland to the north-west Highlands of Scotland.

The section at St. John, New Brunswick, where the Baltic and Welsh types of the *Olenus* fauna occurs, shows that the southern shore line of the trough must then have occupied much the same relative position as in Lower and Middle Cambrian time. In the same region the strata containing this fauna, with *Peltura scarabaeoides* and *Dictyonema flabelliforme,* are overlain by dark shales with Arenig graptolites. These graptolite-bearing terrigenous deposits eventually extended across the trough northwards, until, in Newfoundland, they came to rest on the Beekmantown limestones.

In the Lake Champlain region, in the Chazy limestone, which there immediately succeeds the Beekmantown limestone without the intervention of the Arenig graptolite shale, there is a survival of the Beekmantown molluscan fauna with only such slight modifications as to indicate genetic descent. In the same trough the descendants of this fauna are to be found in the Trenton limestone.

In this connection it is worthy of note that the molluscan fauna and the corals of the Stinchar and Craighead limestones of Upper Llandeilo age in the Girvan district of the Southern Uplands have an American facies, as first suggested by Nicholson. The appearance of American types in these limestones may be accounted for in the following manner: attention has already been directed to the divergent types of sedimentation presented by the Upper Cambrian strata of the north-west Highlands, and of the south-east Highlands, at Stonehaven and Aberfoyle. In the former case there is a continuous sequence of dolomites and limestones, while in the latter we find a group, comprising radiolarian cherts and black shales, associated with pillowy spilitic lavas and intrusive igneous rocks, indicating conditions of deposition at or near the limit of sedimentation. But, notwithstanding the different types of sedimentation and the divergent faunas in the two areas, I believe that during the Upper Cambrian period, and probably for some time thereafter, continuous sea extended from the north-west Highlands to beyond the eastern Highland border. The Upper Cambrian terrigenous sediments which we now find at Stonehaven and Aberfoyle must have been derived from land to the south. In Llandeilo time the Arenig and Lower Llandeilo rocks of the Girvan area were elevated and subjected to extensive denudation. On this highly eroded platform, as first proved by Prof. Lapworth, coarse conglomerates, composed of the underlying materials, were laid down in association with the Stinchar and Craighead limestones. In my opinion the appearance of the American forms in these limestones is connected with the movement that produced this unconformability in the Girvan area. This local elevation was probably associated in some form with the great crustal movements that culminated in the overthrust of the north-west Highlands and caused the intense folding and flaser structure of the rocks along the Highland border. By these movements shore-lines may have been established between the north side of the old Palæozoic sea and the Girvan area, which permitted the southern migration of the American forms.

Note.—Since writing the above my attention has been directed to the recent work of Bassler on "The Early Palæozoic Bryozoa of the Baltic Provinces," published by the Smithsonian Institution in 1911. In his introduction the author has shown that the Ordovician (Lower Silurian) and Gothlandian (Upper Silurian) rocks of the Baltic provinces contain a larger percentage of bryozoan species, in common with the Black River, Trenton, and Niagara limestones of the same relative age in eastern North America. This fact suggests that during Lower and Upper Silurian time the old lines of migration were still open, and that the Bryozoa, being of clear-water habit, were able to cross the old trough from side to side.

NOTES.

FROM a Press cutting just received from Sydney we learn that Mr. Fisher, Prime Minister, Australia, referred to the forthcoming visit of the British Association in 1914 in his Budget speech on August 1. He said:—"We have been advised that about half as many more members of that association are likely to visit the Commonwealth than was anticipated when our invitation was accepted. This will entail an increase in the amount of money which I propose to give towards their expenses; and, speaking for this Parliament and country, I say that no greater compliment could be paid to Australia than the fact that our visitors are to be increased in number. It is usual a year or eighteen months before the visit is made to send a representative man of the same class as themselves to get into communication with them. We propose to incur that expenditure pending the expenditure of a larger amount to cover their expenses."

THE Chancellor of the Royal Prussian Ordre pour le Mérite has, through the German Embassy, informed Sir William Turner, K.C.B., F.R.S. vice-chancellor and principal of the University of Edinburgh, that the German Emperor has appointed him to be knight of the Order in the department of science. The number of those on whom this Order is conferred is strictly limited, and since 1885, when Lord Lister was appointed, Sir John Murray, Sir Joseph D. Hooker, Lord Avebury, Lord Rayleigh, the Right Hon. James Bryce, Sir David Gill, and Sir Wm. Ramsay have been its recipients. The death of Lord Lister having caused a vacancy, his Majesty the Emperor has been pleased to confer the Order on Sir Wm. Turner, in recognition of the contributions which he has made to anatomical science.

THE fourteenth meeting of the Australasian Association for the Advancement of Science will be held in Melbourne in January, 1913.

THE Royal Aero Club has decided to award its gold medal to Mr. S. F. Cody in recognition of his victory in the recent War Office aeroplane trials.

MR. T. H. MOTTRAM has been appointed to succeed the late Mr. Pickering as divisional inspector of mines in charge of the Yorkshire and North Midlands District. Mr. J. R. Wilson, of Leeds, will fill the position vacated by Mr. Mottram.

WE regret to see the announcement of the death, on September 4, of Dr. Stanley Dunkerley, formerly professor of engineering, Manchester University, and the Royal Naval College, Greenwich, and the author of a standard work on "Hydraulics."

THE departmental committee appointed by the Home Office to consider the best methods of testing miners' safety lamps reports that the official tests for flame

safety lamps should be mechanical and photometric, and should be made by means of an explosive mixture. For the mechanical test they suggest that a lamp should be dropped from a height of 6 ft. on a wooden floor.

THE annual general meeting of the Society of Chemical Industry was held in New York last week under the presidency of Dr. R. Messel, F.R.S. The society's medal, awarded once in every two years for conspicuous service rendered to applied chemistry by research, discovery, invention, or improvements in processes, has this year been awarded to Sir William Crookes, O.M., F.R.S., for his discoveries in physical chemistry and the rare metals. It has been decided to hold the next annual meeting of the society in Liverpool.

ACCORDING to *The Lancet*, the following sums have been bequeathed by Madame Jonglart for the furtherance of science in France:—50,000 francs to the Collège de France; 95,000 francs to the faculty of science of the Sorbonne, of which amount 55,000 francs is to be devoted to the zoological laboratory; 95,000 francs to the museum; 50,000 francs to the Faculty of Medicine; 70,000 francs to the School of Advanced Studies; 150,000 francs to be divided between the Geographical and Anthropological Societies and the Association for the Advancement of Science, and 139,000 francs to various scientific and charitable institutions.

THE Board of Agriculture and Fisheries desires to direct attention to the fact that the employment, from time to time, in the newspaper Press and elsewhere, of the phrase "cattle plague" in connection with the recent outbreaks of foot-and-mouth disease in this country has given rise to considerable apprehension in Continental countries, and is calculated to be prejudicial to the interests of British stockowners. The Board wishes, therefore, specifically to state that no case of cattle plague (*Peste bovine, Rinderpest*) has recently occurred in the United Kingdom, which has been absolutely free from that disease since the year 1877, that is for more than thirty-five years past.

BY the will of Mr. A. O. Hume, C.B., an obituary notice of whom appeared in our issue of August 8, his collection of heads and horns of Asiatic and other animals is left to the trustees of the British Museum, provided that an undertaking be given by the trustees that the collection be preserved in an undivided condition. The testator confirmed a settlement dated January 10, 1907, by which he gave a sum of 10,000*l.* Two-and-a-Half per Cent. Consolidated Stock for the endowment of the South London Botanical Institute, and also the provisions of an indenture dated September 29, 1911, by which he gave his premises, 323, Norwood Road, for the purposes of the institute, and he left all his botanical books and books on ornithology and dictionaries upon trust for the institute, to encourage the study of botany (especially British botany) in the county of London south of the River Thames, and also all parts of his herbaria not already transferred to the institute. Subject to the payment of certain annuities, Mr. Hume left the residue of his property to the South London Botanical Institute.

THE council of the Institute of Chemistry is making an endeavour to raise a fund for new buildings for the institute. There can be no doubt that the institute has steadily raised the standard of education in chemical science in the British Empire, and by its means the practice of chemistry, as a profession, has become firmly established and honourably maintained for the public good. From a perusal of the papers relating to the appeal issued to the fellows and associates, it appears that owing to alterations which the London County Council propose to carry out by the widening of Southampton Row, at the rear of the present premises of the institute, 30 Bloomsbury Square, it will not be possible to effect a renewal of the present lease. The council of the institute wishes, therefore, to take this opportunity to secure more suitable and permanent headquarters. It is reckoned that with real economy, adequate provision for the work of the institute can be obtained for about 15,000*l.* The appeal has now been issued nearly three years, and the amount promised to date is about 10,000*l.* As the council will proceed to select a site and prepare plans at the close of this year, it is very desirous of being assured that the full sum of 15,000*l.* will be available, and it is hoped, therefore, to raise the 5000*l.* which is still required before the end of October. Contributions may be forwarded to the president at 30 Bloomsbury Square, London, W.C., or may be sent direct to the account of the Institute of Chemistry (Buildings Fund), with the London County and Westminster Bank, Ltd., 214 High Holborn, London, W.C.

IN the September issue of *Man* Mr. A. R. Brown has compiled from his own personal knowledge and information gathered from some published literature a useful map of Western Australia, showing the distribution of several of the native tribes. The map also marks the division between the tribes which practise circumcision and subincision on the east, and those on the west among whom these rites are unknown.

MAJOR A. J. N. TREMEARNE publishes in the September issue of *Man* selections from a diary written in the years 1843–48 by his great-uncle, the late Rev. John Martin, a Wesleyan missionary to the West Coast of Africa, which possess a special interest because they supply a record of a remarkable type of fetish practices before anthropologists had begun to interest themselves in such matters. The natives in his day, he says, had some confused ideas about metempsychosis, which to a reader of our time suggests totemism. Thus, when a child was carried off by a wild beast, it was believed that some deceased member of the family, annoyed at the neglect of his relatives, had entered the animal and caused the attack, and for this reason they would not kill such animals. The living sacred snake, Dagwe or Dagbi, used to get loose, enter houses and kill poultry until he was finally captured by his priest. The insolent and outrageous conduct of the fetish priests and priestesses during their processions through the towns is specially noteworthy.

THE Field Museum established at Chicago in 1893 has issued a well-illustrated catalogue of a valuable collection of antiquities from Boscoreale, in South

Italy, which has been recently presented. It is the work of Mr. De Cou, who was killed by Arabs while conducting excavations at Cyrene in north Africa in March, 1911. Mr. Tarbell, professor of classical archæology at Chicago, has now edited the work of his friend, with some additions. Nearly the whole collection comes from a villa at the foot of Mount Vesuvius which shared the fate of Pompeii in the eruption of 79 A.D. It contains some curious frescoes and a number of bronze articles, of which the most remarkable is a fine bronze table, the legs shaped in the form of a lion's feet. This was found in a room with the skeletons of two men and a woman, who had apparently perished in the attempt to remove to safety the more valuable property of the house. Two bronze bathing-tubs, which have counterparts in the Naples Museum from Pompeii, are interesting on account of their comparative rarity.

THE movement in favour of the protection and conservation of scenery, antiquities, and the native flora and fauna has made considerable progress in Germany and Switzerland, as well as in other parts of the Continent, during the last few years. A recent number of the *Naturwissenschaftliche Wochenschrift* (No. 27, 1912) is occupied by a series of four articles dealing with the scenic, geological, botanical, and zoological aspects of the question, and contributed by Profs. W. Bock, F. Wahnschaffe, P. Graebner, and M. Braess respectively. In each case the writer describes, with numerous concrete examples, the melancholy results of various acts of vandalism and destruction—the spoiling of otherwise beautiful scenery by huge advertisement hoardings, the erection of painfully conspicuous buildings on hillsides and on the shores of lakes, the conversion of fine lakes into unsightly marshes owing to the construction of waterworks in the neighbourhood, the building over of interesting or even unique geological outcrops, the rooting-up of rare plants, the threatened extinction of rare animals, &c. Righteous indignation is expressed at the wanton or careless mischief done by those responsible for such acts; but it is gratifying to note that vigorous steps are being taken by the State and by private organisations to protect beautiful and interesting natural objects, animate and inanimate, from continued vandalism, and to undo wherever possible the harm already done.

AN article in *The Scientific American* of August 10 discusses the proposal of Prof. Etchegoyen to flood a portion of the Sahara with sea-water by means of a channel from the Mediterranean and thereby to create an inland sea, which, as he claims, would favourably affect the climate, make for conditions of fertility, and for possibilities of colonisation, and provide a channel of communication. Quite apart from the possibility or desirability of the scheme itself, a considerable number of crimes seem to have been committed in the name of physical geography by opponents of the scheme, who have foreseen that the new subtropical area thus created would so far affect the climate of more northern lands as to bring the arctic belt southward to Denmark, and they even seriously discuss the probability of the upsetting of the earth's equilibrium by the displacement of so great a body of sea-water. The writer of the article is at pains to calm these fears, shows that the total area of the Sahara capable of flooding from the sea is no large proportion of the whole, and appears to welcome the idea as much for its own romantic sake as for any benefits which it might confer. He is not concerned to remark upon the ultimate condition of a practically stagnant pond of sea-water, with only a long narrow channel connecting it with the general marine circulation.

THE second volume of Dr. G. Linck's "Fortschritte der Mineralogie, Kristallographie und Petrographie" is now issued (Jena: G. Fischer, 1912. Price 10.50 marks). This annual of the German Mineralogical Society contains original memoirs, and also useful reviews of current work, in which a number of papers are brought together and compared. J. H. L. Vogt (p. 24) summarises his views on the production of ore-deposits by magmatic differentiation; A. Ritzel (p. 62) treats of plasticity in crystals; and both these papers have considerable geological interest. H. Stremme (p. 87) discusses what is known as to the chemistry of kaolin, and papers follow on petrography and on meteorites. The aim of the publication, like that of the *Geologische Rundschau*, is to correlate recent work in the interests of those engaged in teaching and research. The individuality imparted by the authors to their reviews makes an annual of this type far more interesting than a collection of ordinary abstracts.

DISEASES of the respiratory and digestive organs among apes and monkeys in confinement are discussed by Mr. W. R. Blair in vol. i., No. 9, of *Zoologica*. Among other items in the report, it may be noted that orang-utans and chimpanzees in the New York Gardens were infected in 1901 by an outbreak of ulcerating dysentery due to the presence of *Balantidium coli*. The source of the infection was traced to Galapagos giant tortoises in an adjacent enclosure, the colons of which swarmed with the parasite, although the health of the reptiles was unaffected.

DR. ANNANDALE has sent us a copy of the report of a lecture on recent advances in our knowledge of the fresh-water fauna of India, published in vol. viii. of the Journal and Proceedings of the Asiatic Society of Bengal. During the last five years Dr. Annandale has devoted great attention to this fauna, with special regard to the biological relations between different groups of fresh-water organisms, seasonal changes in the life-cycles of the lower invertebrates, and the effect of environment on sponges and other plastic groups. The geographical distribution of the fresh-water fauna as a whole is reserved for future investigation.

SELF-FERTILISATION in the fresh-water snail *Limnaea columella* forms the subject of an article by Mr. H. S. Colton in the May issue of the Proceedings of the Philadelphia Academy. As the result of investigation, it appears that the eggs, when isolated, are self-fertilised, and that the generation-period lasts only two or three months. When more than one species of pond-snail inhabit the same area, hybridisation may occur. *L. columella* seems to present some of the factors necessary for the investigation of a "pure-

line" development, that is to say, a line formed by the descendants of a single "homozygotic" organism propagating by self-fertilisation.

THE annual report of the Marine Biological Association of the West of Scotland for 1911 shows that the marine station at Millport is being more largely used by competent investigators, and the amount of first-class scientific work which is being carried out is highly creditable to those who have charge of its organisation. The report contains summaries of the work of Dr. J. F. Gemmill on the anatomy and development of starfishes, of Prof. MacBride's researches on Echinus and Echinocardium and their hybrids, and of Dr. Valentin Dogiel's studies on the development of Pycnogonida. The most unsatisfactory feature of the report is the statement that the steam yacht *Mermaid* has been laid up from want of funds to run her. The use of an adequate steamboat for collecting work is a matter of vital importance to every marine station, and it is to be hoped that in such a wealthy district as that in which the station is situated this defect may soon be remedied by local enterprise.

TO the *Naturwissenschaftliche Wochenschrift* of August 18, 1912, Dr. O. Antonius contributes an article on the tarpan of eastern Europe and its relationship to the wild Mongolian horse. The wild horses seen by Pallas in some part of Mongolia are considered to represent a race of the latter; the name *Equus ferus*, Pallas (shown by Mr. Lydekker to be invalid), being adopted for the Mongolian horse, which Hamilton Smith identified years ago as the true tarpan, although this is not referred to by the author. On the other hand, the Russian tarpans obtained in 1853, 1862, and 1866, and described by Schatilow and Radde, are regarded as a truly wild and distinct species, for which the name *E. gmelini* is proposed. The third of these, which was gelded soon after its capture, was acquired in 1884 by the Zoological Gardens at Moscow, where it died a few years later, and was the last representative of its kind. It may be added that these Russian tarpans are generally regarded as half-breds, to which category belongs the animal figured by the author as Przewalski's horse of Mongolia. The domesticated ponies of Bosnia are considered to represent the tarpan type.

THE fifth volume of Notes from the Royal Botanic Garden, Edinburgh, has just been completed by the issue of part xxv., containing an index to the volume and various items of information concerning the garden, together with a somewhat bald key-plan—plenty of blank space is left which might with advantage be utilised in indicating the outdoor plants grown in the garden, as is done in the case of Kew. The most important contents of the present volume are the articles dealing with the plants, including many new species, collected by George Forrest in Yunnan and Eastern Tibet, and described by various distinguished systematists.

THE seismological observatory of Rocca di Papa, near Rome, is one of the oldest in Italy. That it is also one of the most efficient is shown by the summary of the records of the last twelve years recently issued by the director, Dr. G. Agamennone, and his assistant, Mr. A. Cavasino. From this it appears that the average yearly number of earthquakes recorded is 186. Of these, 44, or one-quarter of the total number, originated at distances of less than 100 km., the extinct Latial volcanoes being the seat of a considerable number; while 85 originated at distances greater than 5000 km.

THE report on rainfall registration in Mysore for the year 1910, which has recently reached us, shows that the number of official stations was then 227, in addition to which a few coffee-planters maintain private stations on their estates. Compared with the district averages for the forty years, 1870–1909, the rainfall was in excess by about 8 inches, or 22 per cent. Some heavy falls in twenty-four hours were recorded in each of the eight districts into which the province is divided, the heaviest being 10·8 inches at Nagar and 10·5 inches at Aralagode in the Shimoga district early in July.

THE first report of the Meteorological Observatory in connection with the College of Nuestra Señora de Montserrat, Cienfuegos, Cuba, has just been issued. The volume has been prepared by the Rev. Simon Sarasola, S.J., director, and contains details of the establishment of the observatory, together with notes upon the meteorological observations taken at the college from 1886, and upon cyclones and their prognostication. The position of the observatory is an important one, especially with regard to the Panama Canal, and the results obtained will probably prove of great interest. The instrumental equipment is excellent, including nine self-recording instruments. The tables for 1911, printed in the report, include observations made every two hours, from 6 a.m. to 8 p.m., of barometer, temperature, vapour tension, relative humidity, and direction and force of wind, with cloud observations four times daily and notes on the weather. The tables are not arranged on the international system, although the international symbols are used in the weather columns. It is a matter for regret that the daily maxima and minima of temperature are not printed instead of the highest and lowest of the bi-hourly readings. The absolute extremes of temperature of each month are, however, given in one of the yearly tables.

THE Meteorological Office has commenced the issue of a series of geophysical memoirs, the first of which is by Commander Hepworth, and deals with the effect of the Labrador current on the surface temperature of the North Atlantic, and of the latter on the air temperature and pressure over the British Isles. The author shows from the records of the last eight years that abnormally low temperatures in the North Atlantic are due to the current of cold water from the coast of Labrador and not to the ice which that current brings with it. The low temperature of the water lowers the temperature of the air over these islands by cooling the winds from seawards, by influencing the paths of depressions, and by diminishing cloudiness. When the north-eastern arm of the

North Atlantic is colder than usual, the centres of depressions pass almost directly over the British Isles and produce excessive cloudiness and rain.

The Builder for August 30 has an illustrated article on the reconstruction of the campanile of St. Mark's, in Venice. Preserving the old foundations as a nucleus, a strong enclosure of Istrian stone has been constructed around them; the old foundations had a superficies of 222 square metres, and the present foundations cover 407 square metres, nearly double the surface. As the tower began to rise, a movable framework was employed; for the carrying up of the materials a Steigler elevator was used, which also lifted the bells into position. The bells weigh respectively 3625, 2556, 1087, 1366, and 1011 kilograms, and the angel 1300 kilograms. The tower itself from outside the ground to its summit weighs 8,900,000, and with its foundation included about 12,970,000 kilograms. The Loggetta of Sansovino has also been successfully restored. The loggia had been completely crushed by the campanile in its fall. All the fragments of sculpture were carefully collected before commencing the work of reconstruction; in the group of the Virgin and Child alone there were no fewer than 1600 separate pieces. The new campanile was opened on April 25 of this year.

"THEORIES OF SOLUTIONS," by Svante Arrhenius, director of the Nobel Institute of the Royal Swedish Academy of Science, Stockholm, is being published this week by Mr. Frowde for the Yale University Press. The volume constitutes the eighth of the series of Silliman Memorial Lectures at Yale.

OUR ASTRONOMICAL COLUMN.

DISCOVERY OF A COMET.—A telegram from the Kiel Centralstelle announces the discovery of a comet by Mr. Gale, of New South Wales, on September 9. The position at 7h. 24·8m. (Sydney M.T.) on that date was:—R.A. = 13h. 37m. 1s., decl. = 36° 31′ 2″ South.

THE MARKINGS OF JUPITER.—A valuable summary of the phenomena attending the various prominent markings on Jupiter is contributed by Mr. Denning to No. 452 of *The Observatory*. He first deals with the large dusky marking discovered by Major Molesworth, in the same latitude as the red spot, in February, 1901. This remarkable object, which can be seen well with a 3-in. refractor, has exhibited some extraordinary variations in length, having, for example, decreased from 115° in June, 1911, to 63° recently. It has also exerted a marked influence on the red spot, the motion of the latter being considerably accelerated at the conjunctions of the two features in 1902, 1904, 1906, 1908, and 1910. For the period 1894–1910 the rate of rotation of the red spot was 9h. 55m. 40·63s., exactly that adopted for system ii., but then a rapid acceleration set in, and for the two succeeding years the period was 9h. 55m. 37·5s. This drifting westward was at the rate of about 22,000 miles per year, but recent observations indicate that it is temporarily suspended.

OBSERVATIONS OF NOVA GEMINORUM No. 2.—A number of observations of Nova Geminorum No. 2 are discussed in No. 4598 of the *Astronomische Nachrichten*, chiefly dealing with determinations of position and magnitude. Dr. H. E. Lau, from observations made between March 14 and May 18, finds secondary maxima on the light-curve on March 14, 23, and 31, April 18, and May 1. At first the period appeared to be about eight days and the amplitude 1·0 magnitude, but later the period lengthened and the amplitude decidedly decreased. Most of the observations indicate that the magnitude became fairly stationary about the end of May, its value being about 8·0, but Prof. Eginitis records an apparent augmentation from 8·0 on June 4 to 7·4 on June 7.

Prof. Newall states that spectroscopic observations by Messrs. Stratton and Brunt on August 13 showed the nebula line, 501$\mu\mu$, to be much the strongest line in the visible spectrum; other lines observed were at $\lambda\lambda$464 (?), 486 (Hβ), 496, 531 (?), and 575. The magnitude, difficult to estimate, was probably a little brighter than 9·0.

Prof. Strömgren records the magnitude as 7·70, on the PD system, on August 24, while, in No. 452 of *The Observatory*, Mr. Harold Thomson gives it as 7·7 on August 20, on the scale employed by the Variable Star Section of the B.A.A.

THE ORBIT OF ξ PERSEI.—The star ξ Persei is one of those interesting binaries in which the radial velocity as determined from the *H* and *K* lines of calcium differs from that determined from the other lines. Its spectrum is of the Oe 5 B class, according to Miss Cannon, and shows lines of H, He, Ca, and Fe, but the H and He lines are generally too diffuse to give trustworthy results for the velocity.

Using the *H* and *K* lines only, Mr. Cannon, of the Ottawa Observatory, has derived an orbit from his own measures and those made at the Yerkes Observatory, which he publishes in No. 3, vol. vi., of the Journal of the R.A.S., Canada. He finds the period to be 6·951 days, the range of velocity 15·7 km., and the velocity of the system 15·4 km. The diameter of the projected semi-major axis of the orbit is 751,800 km. An attempt was also made to determine the velocity from the broad lines, other than calcium, but nothing more definite can be said than that they show a much higher positive velocity than do the *H* and *K* lines.

CATALOGUE OF STELLAR PARALLAXES.—No. 24 of the Publications of the Astronomical Laboratory at Groningen contains a wealth of information concerning the parallaxes, probable intrinsic luminosities, &c., of 365 stars. The table has been made up from many sources, and relative weights are given to the different values. There are eleven stars with parallaxes greater than +0·300″, the five nearest, with their adopted parallaxes, being: α Centauri (+0·759″), Sirius (+0·376″), Piazzi, oh. 130 (+0·360″), τ Ceti (+0·334″), and Procyon (+0·324″). Ten stars have computed luminosities greater than one hundred times that of the sun, the five most luminous being: β Centauri (520), Regulus (423), Achernar (350), Capella (300), and Arcturus (230); the values in brackets are the computed luminosities, that of the sun being taken as unity.

THE ORBITS OF COMETS.—In No. 4598 of the *Astronomische Nachrichten*, Prof. Strömgren points out, in reference to a recent note by Prof. W. Pickering on the fundamental form of cometary orbits, that Prof. Pickering has misconstrued the sense of his conclusions. The final contention of Prof. Strömgren's (not Prof. Kobold's, as was inadvertently stated in our previous note on August 15) was that if the effects of Newtonian gravitation be strictly taken into consideration it is probable that all the cometary orbits yet considered would prove to be *elliptical*.