

brass, tracing (chiefly by means of etymology) the history and the migration of European plants and animals to their home in Asia.

MESSRS. CROSBY LOCKWOOD AND CO. make the following announcements for the approaching publishing season:—"Electro-Deposition," by Alexander Watt, author of "Electro-Metalurgy"; "The Prospector's Handbook, a Guide for the Prospector and Traveller in Search of Metal-bearing or other valuable Minerals," by J. W. Anderson, M.A., F.R.G.S.; "The Engineman's Companion, a Practical Educator for Enginemen, Boiler Attendants, and Mechanics," by Michael Reynolds; "The Combined Number and Weight Calculator," by Wm. Chadwick, Public Accountant; "Our Temperaments, their Study and their Teaching, a Popular Outline," with illustrations, by F.R.C.S.E.; "The Artist's Tables of Pigments," by H. C. Standage; "Land and Marine Surveying," by W. Davis Haskoll (entirely new edition); "The Metal Turner's Handbook, a Practical Manual for Workers at the Foot Lathe," by Paul N. Hasluck (second edition, revised), being the first volume of a new series of "Handbooks on Handicrafts."

THE "Sun" Knife-cleaner has some points which deserve notice. It is supported on a light cast-iron standard, the upper portion of which is bored out and faced to make the bearing where alone perfect fit is required. A cast-iron spindle is fitted into this bearing, and supports upon a flattened face two spring disks made of cast steel finely tempered, dished in the centre and having rays upon them like the spokes of a wheel, which turn slightly outwards at their ends, so as to form a tapered space adapted to the wedge form of the length of the knife. These springs are so mounted upon the spindle that the rays of the one are opposite to the space, between the rays of the other. The spindle is terminated by a screw upon which a thumb nut is fixed to hold the handle in position and keep the working parts together. By means of this screw the springs can be pressed more or less closely together as required. Leather rings are riveted to the inner faces of the springs, and form the surfaces upon which the knives are cleaned and polished; the rivets are in the dished portion of the springs and so out of the way of the knife-blade; the polishing powder is supplied through a hole in the face of the front spring. The knife whilst being cleaned is supported below a wrought-iron piece cast into the standard and passed in and out of the machine. The difficulty in cleaning a knife is due to its double wedge form. A knife is a long wedge from the tip to the shoulder, and a short wedge from the edge to the back, and it is evident that the pressure brought to bear upon it must be of an elastic character, so as not to grind the knife away. As regards the length of the knife this is effected by the outward taper of the rays of the springs. The two leather rings between which the blade is passed in and out being pressed against the blade of the knife by the rays of the springs as described, it is evident that there is an elastic pressure upon it; the spring on the one side diminishes in its bearing pressure, as that on the other side increases, and hence an equable pressure is applied to all parts of the blade, as is proved by the excellent polish produced. A small portion of powder being supplied through the hole in the front spring, the knife is placed with its edge downwards below the wrought-iron support and passed slowly in and out of the machine between the leather disks with the left hand, whilst the right hand is employed in turning the handle of the machine in the direction of the hands of a clock. In this way from one inch to two inches in depth of the surface of each leather (depending upon the size of the machine) presses elastically upon the blade. This being the greatest frictional resistance at any moment between the blade and the polishing surfaces, the labour of cleaning is reduced to a minimum, while the knife can be polished to the shoulder owing

to the leathers being bevelled. Special tools have been designed for cutting and bending the wrought-iron supports in one operation, for cutting and bevelling the leathers, and riveting and fitting them to the springs. These machines are supplied in four sizes.

IN contrast to the weather in Southern Norway during May and June (NATURE, vol. xxxii. p. 354) the weather of July was warmer and more normal, the mean temperature of the month—viz. 17.1° C. being 0.5° above the normal, 16.6°. This is chiefly due to the southern winds prevailing in the first part of the month. On July 21, however, the weather changed, northern and north-western winds prevailing, with clear and dry air, and in consequence of the great radiation, the temperature fell several times very low during the second part of the month. The minimum temperature—viz. 6.4° C.—was registered at Christiania on the night of the 22nd., and the highest—viz. 29° C.—on the 6th. The rainfall was 40 per cent. below the normal. With the exception of the coast towards the Naze, the month has been cold throughout the land on the whole, the most unfavourable parts being the west coast, where the temperature was 1° C. below the normal mean. In the mountains and in East Finmarken it sank several times below 0°. The rainfall in the southern and eastern parts was below the average, but in the northern and north-western parts it was above it. The greatest rainfall was registered in Finmarken, where, in Alten, for instance, it was 142 per cent. above the average.

THE additions to the Zoological Society's Gardens during the past week include a Macaque Monkey (*Macacus cynomolgus* ♂) from India, presented by Mrs. Paterson; a Humboldt's Lagothrix (*Lagothrix humboldti*) from the Upper Amazons, presented by Mr. F. J. Hammond; two Macaque Monkeys (*Macacus cynomolgus*) from India, presented respectively by Mr. F. Debenham and Miss Lucy McArthur; two West Indian Agoutis (*Dasyprocta cristata*), seven Crab-eating Opossums (*Didelphys cancrivora*), two Rough Terrapins (*Clemmys punctularia*), two Brazilian Tortoises (*Testudo tabulata*), two Teguxin Lizards (*Teguixin*), two Tuberculated Iguanas (*Iguana tuberculata*), nine Giant Toads (*Bufo aqua*) from Trinidad, presented by Mr. F. J. Guy; two Palm Squirrels (*Sciurus palmarum*) from India, presented by Mr. A. Bellamy; a Great Kangaroo (*Macropus giganteus* ♂), a Rufous Rat Kangaroo (*Hyposiprymnus rufescens*) from New South Wales, a Roan Kangaroo (*Macropus erubescens* ♀) from South Australia, presented by Mr. C. Czarnikow, F.Z.S.; a Common Crossbill (*Loxia curvirostra*), British, presented by Mr. H. S. Eyre; a Green Lizard (*Lacerta viridis*) from Jersey, presented by Mr. G. V. Colliver; a Guinea Baboon (*Cynocephalus sphinx*) from West Africa, two Bonnet Monkeys (*Macacus sinicus*) from India, two Aelian's Wart Hogs (*Phacocharus africanus* ♂ ♂) from Africa, deposited; a Garnett's Galago (*Galago garnetti*) from East Africa, a Harnessed Antelope (*Tragelaphus scriptus* ♀), an Elate Hornbill (*Ceratogymna elata*) from West Africa, a Puff Adder (*Vipera arietans*) from South Africa, a Lacertine Snake (*Calopeltis lacertina*), European, an Aldrovandi's Lizard (*Plestiodon auratus*) from North-West Africa, purchased; a Leopard (*Felis pardus*), born in the Gardens.

ASTRONOMICAL PHENOMENA FOR THE WEEK, 1885, OCTOBER 4-10

(FOR the reckoning of time the civil day, commencing at Greenwich mean midnight, counting the hours on to 24, is here employed.)

At Greenwich on October 4

Sun rises, 6h. 8m.; souths, 11h. 48m. 37.5s.; sets, 17h. 29m.; decl. on meridian, 4° 31' S.; Sidereal Time at Sunset, 18h. 29m.

Moon (New on October 8) rises, 1h. 10m.; souths, 8h. 31m.; sets, 15h. 41m.; decl. on meridian, 12° 2' N.

Planet	Rises h. m.	Souths h. m.	Sets h. m.	Decl. on meridian
Mercury ...	5 10 ...	11 18 ...	17 26 ...	0 43 N.
Venus ...	9 55 ...	14 17 ...	18 39 ...	19 4 S.
Mars ...	0 15 ...	8 0 ...	15 45 ...	18 47 N.
Jupiter ...	4 13 ...	10 38 ...	17 3 ...	4 12 N.
Saturn ...	21 35* ...	5 43 ...	13 51 ...	22 18 N.

* Indicates that the rising is that of the preceding day.

Oct.	h.	
6 ...	17 ...	Jupiter in conjunction with and 1° 25' north of the Moon.
7 ...	20 ...	Mercury in conjunction with and 0° 29' north of the Moon.

HEREDITY

AT the February meeting of the Swedish Anthropological Society Prof. Wittrock read a paper on the hereditability of colour of the eyes. The speaker had been requested by Prof. Alphonse De Candolle, of Geneva, to make observations on this point, which, together with those made in Switzerland, North Germany, and Belgium, had formed the material for M. De Candolle's paper, "Hérédité de la couleur des yeux dans l'espèce humaine" (*Archives des Sciences Physiques et Naturelles*, 3^e période, t. xii., Genève, 1884). From the same the remarkable fact was derived that brown eyes were more common in men than women; of the individuals examined 41·6 per cent. of men and 44·2 per cent. of women had brown eyes. Further, in families where the parents had the same colour of eyes 80 per cent. of the children of parents with brown eyes had brown eyes, whilst of children of parents with blue eyes 93·6 per cent. of them had eyes of that colour. The unconformity was no doubt due to atavisme or the hereditary influence of ancestors. Of the children of parents of whom the father had brown and the mother blue eyes 53·3 per cent. had brown, whilst where the reverse was the case 55·9 per cent. had blue eyes. As the percentage of brown-eyed children of parents with bi-coloured eyes was highest, it seemed as if brown eyes were always on the increase to the detriment of blue ones. It appeared also from these researches that women with brown eyes have better prospects of marrying than those with blue. 52 per cent. of the married women had brown eyes, and only 48 per cent. of them blue—a circumstance which is the more remarkable as the number of women with brown eyes in Italian Switzerland is only 44 per cent. Another remarkable discovery was that the average number of children of parents with eyes similar in colour was 2·7, whilst that of those with different colour was 3·18, which was an additional proof of the fact that children of parents with similar organisation were as a rule of weak constitution. Comparing the colour of the eyes of the children where the parents were bi-coloured, with those of each of the latter, it was discovered that the eyes of the father were inherited by 48·8 per cent. of the children, and those of the mother by 51·2 per cent., which, divided between sons and daughters, showed that 47 per cent. of the former and 49·5 per cent. of the latter inherited the eyes of the father, whereas 53 per cent. of the sons and 50·5 per cent. of the daughters inherited those of the mother. Since Prof. Candolle had published his paper, he (the speaker) had continued his researches in Sweden, and from the material he had collected he had discovered results differing from Prof. Candolle's. Of the individuals reported to him 29·6 per cent. of the men and 30·7 per cent. of the women had brown eyes, so that even in that country the latter were more numerous than the former, but this was no doubt due to the circumstance that he had been most anxious to obtain particulars from bi-coloured parents. In accordance with Candolle's results, 75·6 per cent. of children of parents both with brown eyes inherited this colour, whilst of those with blue eyes 97 per cent. inherited that colour. It was but natural that this should be the case in Sweden, where blue eyes predominated. As regards the bi-coloured parents the case was different in Sweden too. If the father had brown and the mother blue, 59·9 per cent. of the children had brown eyes, whilst where the reverse was the case 53 per cent. of them had brown ones. These figures were the reverse of Candolle's. But of *all* bi-coloured parents 56 per cent. of the children had brown eyes, *i.e.* that in Sweden too the latter are on the increase. He could not say what rôle the colour of the eyes played in the

selection of a wife in Sweden, as he had no statistics of the distribution of brown eyes in general, but there was a tendency similar to that stated above, as, of the parents embraced by these researches, the majority of wives had brown eyes. With reference to the number of children in Sweden of con-coloured and bi-coloured parents, that of the former was 4·49 and that of the latter 4·03, whilst 52·6 per cent. of the children inherited the eyes of the father and 47·4 per cent. those of the mother; of the sons 51·8 per cent. inherited the eyes of the father, and 48·2 per cent. those of the mother, which figures as regards the daughters were respectively 53·5 and 46·5 per cent. This shows that in Sweden the eyes are not predominantly inherited from the mother alone, and that the offspring of equally-constituted parents should not be weaker. The speaker stated in conclusion that he is continuing his researches. He excludes children under ten years of age from the same, and classifies blue-grey or grey eyes as blue.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE

PROF. W. GRYLLS ADAMS, F.R.S., will deliver a Course of Lectures at King's College, London, on Heat and Light, during the Academical Year 1885-6. A Course of Practical Work in Electrical Testing and Measurement, with especial reference to Electrical Engineering, will be carried on under his direction in the Wheatstone Laboratory. There will also be a Course of Lectures on Mechanics and the Principles of Energy. The Wheatstone Laboratory is open daily from 1 to 4, except on Saturdays. For further particulars apply to Prof. Adams, King's College, London.

THE following appointments have recently been made at the Victoria University, Owens College, Manchester:—To the Professorship of Mathematics: Mr. Horace Lamb, M.A., F.R.S., late Fellow of Trinity College, Cambridge, and Professor of Mathematics in the University of Adelaide. To the Professorship of Anatomy: Mr. Alfred H. Young, M.B., F.R.C.S.

SOCIETIES AND ACADEMIES

PARIS

Academy of Sciences, September 21.—M. Bouley, President, in the chair.—On the development of cholera in India, by M. Gustave Le Bon. In support of Prof. Peter's view that European differs from Asiatic cholera only in the greater intensity of the causes producing it, the author argues that both forms might break out spontaneously in any country through the volatile germs arising from purified organic matter. In his former researches he showed that, apart from these germs, there exists a series of volatile alkaloids which, when introduced by respiration, produce almost fulminating effects. These researches throw much light on the accidents attending the exhumation of bodies long buried and on the spread of typhoid or analogous fevers. The facts recently observed by M. Le Bon during a sudden outbreak of cholera at Kombakonum, in the south of India, tend to confirm this hypothesis. In India itself cholera rages almost exclusively amongst the native populations; the English, who reside in large cantonments, where sanitary arrangements are scrupulously attended to, being seldom attacked. That cholera and intermittent fevers are propagated chiefly by bad water is a point on which opinion is unanimous in that country, and the author's personal experience places it beyond all reasonable doubt.—Elements of Brooks's comet, by M. R. Radau. These elements, according to observations made at Cambridge and Paris, are found to be:—

$$T = 1885, \text{ August } 10^{\circ}30'45''; \text{ mean Paris time.}$$

$$\left. \begin{aligned} \pi - \Omega &= 43 \quad 0 \quad 47 \\ \Omega &= 204 \quad 33 \quad 7 \\ i &= 59 \quad 22 \quad 30 \end{aligned} \right\} \text{Mean equinox of } 1885^{\circ}0.$$

$$\log q = 9^{\circ}8'7694$$

—Note on a new stellar spectroscope, by M. Ch. V. Zenger. This instrument is constructed on a new principle, and chiefly intended to measure simultaneously and accurately the angle of position and the distance of double stars situated very close together.—On the process of fertilisation in the Cephalopods,