and has been described by Prof. Nehring, of Berlin, under the name *M. Ruffii*. The new species is intermediate in many of its characters between the Irish elk and the fallow deer (*Dama vulgaris*). It appears to have lived during the first interglacial epoch, while the Irish elk flourished at a somewhat later geological period. It may possibly, therefore, be regarded as the ancestor of the latter type. The antlers of *M. Ruffii* have fewer "points" or processes than those of *M. hibernicus*, and, although the skull of the animal was as large as or even larger than that of *M. hibernicus*, the antlers were markedly smaller and diverged from one another much less widely than in the case of the latter species. A restoration of the animal accompanies Prof. Nehring's description in *Wild und Hund* for July 19, 1895. From this picture the differences between this new species and *M. hibernicus* may be at once detected.

SOME important experiments of great practical interest have just been published by Dr. Breslauer on the antiseptic properties possessed by disinfectants mixed with different fats in the shape of ointments. As long as fourteen years ago Koch pointed out that carbolic acid combined with olive oil or "carbolised oil," contrary to the prevailing impression, possessed no antiseptic properties. Dr. Breslauer has extended these experiments to an exhaustive examination of various disinfectants, such as carbolic acid, corrosive sublimate, boric acid, nitrate of silver, &c., in combination with oil, vaseline, fat, lanolin anhydricum, lanolin, and unguentum leniens. It was found that the degree of antiseptic power possessed by the disinfectant depended, in a very remarkable manner, upon the particular diluent employed, and that in all cases the best antiseptic results were obtained with disinfectants in combination with lanolin or unguentum leniens. Thus in a series of experiments on the antiseptic effect produced by adding five per cent. of carbolic acid to various substances, it was ascertained that the *Staphylococcus pyogenes aureus* was still living after being immersed in carbolised oil for three days, in carbolised vaselin it survived one day, in fat four hours, in lanolin anhydricum two hours, in lanolin thirty minutes, and in unguentum leniens twenty minutes. Similar results were obtained not only with other bacteria, but also with different disinfectants. Dr. Breslauer has also examined the bactericidal properties of other ointments in frequent use, such as unguentum zinci, unguentum cinereum (benzoatum), and unguentum precipitatum album, and whilst the two latter were found to be possessed of highly antiseptic properties, the former exercised no perceptible effect whatever. In employing ointments it would appear, therefore, advisable to use the disinfectant selected in combination with lanolin or unguentum leniens instead of supplying vaseline, oil, or other fats, the addition of the latter, according to Dr. Breslauer, serving only to reduce the antiseptic action of the disinfectant. This subject is curiously one which has had, so far, hardly any attention bestowed upon it, and with the exception of some experiments by Gottstein, published in 1889, and, still more recently, an inquiry by Ludwig Bach into the antiseptic effect of various eye ointments, Dr. Breslauer's communication seems to be the only one which has appeared.

WE have recently received two new parts of the *Indian Museum Notes*, from the Trustees of the Museum, being vol. iii. parts 4 and 5. Part 4 is devoted to an account of the insects and mites which attack the tea-plant in India, and includes full descriptions and, in most cases, good figures of the principal insects, &c., discussed: and occasionally of their parasites also. The insects belong to all the more important plant-feeding orders; but what appears to us remarkable is the very large number of *Lepidoptera* which are injurious to the tea-plant, as compared with other insects. Thus, only three beetles are mentioned, belonging to the *Melolonthidæ*, *Chrysomelidæ*, and *Curculionidæ* respectively: as against nineteen *Lepidoptera Heterocera* of various families. The pamphlet concludes with a practical appendix on insecticides. It must not, however, be supposed that a treatise of seventy pages can possibly exhaust the subject of the enemies of any particular plant, especially when they are discussed in detail. A glance at the most important European book on entomological botany (Kaltenbach's "Pflanzenfeinde") is sufficient to show us that many plants are attacked by hundreds of different species of insects: and if this is the case in Europe, it cannot but be true to a still greater extent in tropical countries. But fortunately insects are not always uniformly abundant. They are affected by variations of the season; parasites, and many other influences which are more or less obvious to us: and it is only occasionally that one or other of the numerous species which feed upon any given plant becomes sufficiently abundant to cause any serious injury to it. The other number of the *Indian Museum Notes* before us (part 5) is more varied in its contents. It contains an account of the progress of entomology in the Indian Museum, from 1884–1894, by Mr. E. C. Cotes: some short papers by different entomologists on Indian *Diptera* and *Rhynchota*, and a series of miscellaneous notes on insects of all orders, by Mr. Cotes. This part is not only illustrated, like the other, by numerous woodcuts, but also contains three well-executed plain plates.

THREE important papers by Prof. E. D. Cope, and two by Prof. W. B. Scott, make up, with seven plates, the part recently distributed (vol. ix. part 4) of the *Journal* of the Academy of Natural Sciences of Philadelphia. Prof. Cope treats of new and little known Palæozoic and Mesozoic fishes, and describes *Cyphornis*—an extinct genus of birds. The genus is established on a species of bird represented by the superior part of a tarso-metatarse, obtained by Dr. G. M. Dawson from a bed of indurated greenish clay of unknown age from Vancouver Island. The bird appears to possess real affinities with the Steganopodes, combined with affinities to more primitive birds with a simple hypotarsal structure. "The presumed affinity with the Steganopodes," remarks Prof. Cope, "indicates natatory habits, and probable capacity for flight. Should this power have been developed in *Cyphornis magnus*, it will have been much the largest bird of flight thus far known." Another paper by Prof. Cope is on extinct *Bovidæ*, *Canidæ* and *Felidæ*, from the Pleistocene of Southern Kansas and Western Central Oklahoma. Prof. W. B. Scott's memoir on the structure and relationships of *Ancodus* supplements the extensive investigations of Kowalevsky and Filhol by giving an account of the American species of that genus, and by showing the points of resemblance and differences between the approximately contemporaneous species of *Ancodus* in America and Europe. Prof. Scott concludes his valuable paper as follows:—"With the facts at present known, all seem to point to the origin of *Ancodus* in the Old World and its migration to America, in the interval between the Eocene and the Oligocene (Uinta and White River), yet until the American artiodactyls from the middle and upper Eocene are far better known than at present, such a conclusion cannot be regarded as final." The second paper by Prof. Scott deals with the osteology of *Hyænodon*—a genus described by him in 1877, so far as the materials then available would permit. The Princetown expedition of last year resulted in the collection by Mr. Hatcher of several more or less complete skeletons representing a number of species. These specimens of *Hyænodon* enabled Prof. Scott to supplement the earlier account with the present paper, in which is given a restoration of the skeleton of the very curious and remarkable animal with which it deals.

MESSRS. ROWLAND WARD AND CO., of Piccadilly, are sending out invitations to naturalists to inspect a mounted example of the White Rhinoceros (*Rhinoceros simus*) from Zululand. The

two specimens brought home about two years ago were from Northern Mashonaland. Thus this animal, until lately supposed to be quite extinct, has now been found in a second locality. But these are now the only two spots on the face of the earth where this huge creature, formerly abundant in the Cape Colony, still exists, in very dwindling numbers, which will, no doubt, be now rapidly diminished.

A COMMITTEE of six gentlemen has been appointed by the Governor-General of Goa, India, to carry on excavations in the ancient city of Goa, in search of relics of the traditional grandeur of the past, and to take the necessary steps for the preservation of the monuments of Portuguese rule in India in the earlier time.

AN electrical forge, where the whole of the heating required is done by electricity, is in operation at Niagara Falls, the power being supplied by the great cataract. The cost of making a horse-shoe at the electric forge is, it is stated, much less than at an ordinary coal forge. We hear, too, that corn is being threshed by electricity, with very satisfactory results, at Mjolby in Sweden.

WE have received from Mr. W. Radcliffe, of Andreas School, Isle of Man, the inventor of the "Gonagraph," an instrument for drawing perfectly accurate equilateral triangles, squares, pentagons, hexagons, heptagons and octagons, an arithmetical puzzle. The puzzle consists of nineteen small cubes, having a face on each numbered with one of the first nineteen numbers, which are to be placed upon squares, symmetrically arranged on a board, five on the middle row, and two rows of four and three squares to right and left of this. The numbers are to be so arranged that their sum along each of twelve straight lines shall make up thirty-eight. This sum is also obtainable from other symmetrical arangements. It will thus be seen that the puzzle is of the nature of a magic square, and is a very ingenious one. The author has favoured us with his solution, which naturally is at present kept back. He has not furnished us with a clue to his arrangement, and we have in vain searched for it; nor does he say whether he has attempted any extension of the puzzle to thirty-seven or a higher number of cubes. The "thirty-eight" puzzle can be obtained direct from the inventor in a small box for sixpence.

A DESCRIPTION has been sent to us of a new arc lamp for projection purposes, which has been devised by Mr. Cecil M. Hepworth. The instrument has three regulating discs or milled heads of vulcanite, which project at the back, so as to be under the control of the lanternist. The top and bottom discs are for the purpose of regulating the positions of the carbons, and the middle disc has three duties to perform, viz. to bring the carbons slowly together as their points waste in consumption, by a push action to cause the carbons instantaneously to touch, and by a spring to as quickly separate, while by an upward movement the worm-wheel is thrown completely out of gear, and the carbons can be rapidly separated or brought together by hand, a provision necessary for the saving of time when inserting new carbons.

THE September part of the *Proceedings* of the Physical Society of London has reached us, and contains, in addition to the usual valuable supplement of "Abstracts of Physical Papers from Foreign Sources," the following papers:—"A Theory of the Synchronous Motor," by W. G. Rhodes (continuation); "On the Use of an Iodine Voltameter for the Measurement of Small Currents," by Prof. E. F. Herroun, "On the Condensation and the Critical Phenomena of Mixtures of Ethane and Nitrous Oxide," by Dr. Kuenen; "An Electro-Magnetic Effect," by F. W. Bowden; and "The Electrical Properties of Selenium," by Shelford Bidwell, F.R.S.

THE September-October part of the *Physical Review* (Macmillan) contains the following articles: "A Study of the Polarisation of the Light emitted by Incandescent Solid and Liquid Surfaces," by R. A. Millikan, "Alternating Currents when the Electromotive Force is of a Zigzag Wave Type," by E. C. Kimmington, "On Ternary Mixtures," by W. D. Bancroft, part 2; and minor contributions.

BOURNE'S Handy Assurance Manual for 1895, by William Schooling, has been published. It contains in a small compass a whole host of information likely to be of use to those who are interested in insurance matters, and appears to have been compiled with great care.

WE have received from Messrs. G. W. Wilson and Co., Limited, 2 St. Swithin Street, Aberdeen, copies of their catalogues of lantern slides. The list of subjects illustrated is a very full one, and the catalogues may be had upon application.

ON the completion of the fiftieth year of its existence, the editor of the *Botanische Zeitung* publishes a very useful index of the papers contained in the first fifty volumes.

THE September number of the *Irish Naturalist* has just appeared, and is entirely devoted to reports of the Galway conference and excursion of the Irish Field Club Union, held in July.

THE additions to the Zoological Society's Gardens during the past week include a Bonnet Monkey (*Macacus sinicus*, ♀) from India, presented by Miss Larkin; a Macaque Monkey (*Macacus cynomolgus*, ♂) from India, presented by Mr. W. Aldridge; a Purple-faced Monkey (*Semnopithecus leucoprymnus*) from Ceylon, presented by Mrs. Griffith; a —— Monkey (*Cercopithecus*, sp. inc. from Africa, presented by Miss Pigott; two Vulpine Phalangers (*Phalangista vulpina*, ♂ ♀) from Australia, presented by Mr. F. J. Horniman; a Magpie (*Pica caudata*), British, presented by Mr. H. E. Blandford; an Orange-cheeked Amazon (*Chrysotis autumnalis*) from Central America, presented by the Rev. W. J. Loftie; a Martinique (*Ionornis martinicus*), captured off the Island of Ascension, presented by Mr. H. W. Power; a Smooth Snake (*Coronella levis*), a Common Viper (*Vipera berus*), British, presented by Mr. G. J. S. Warner; a Brown Capuchin (*Cebus fatuellus*) from Guiana, three Grant's Francolines (*Francolinus grantii*) from East Africa, two Egyptian Trionyx (*Trionyx niloticus*) from the Congo, deposited; a Two-toed Sloth (*Cholopus didactylus*) from Brazil, a Yellow-naped Amazon (*Chrysotis auripalliata*) from Central America, purchased.

OUR ASTRONOMICAL COLUMN.

THE ORBIT OF μ^2 BOOTIS (Σ 1938).—Dr. T. J. J. See gives in the *Astr. Nach.*, No. 3309, Bd. 138, the results of his researches on this star. This double was discovered by Sir William Herschel in 1781, and since the time of Struve it has been very abundantly observed. In all parts of the orbit the pair is sufficiently wide to be seen with a 6-inch telescope. The investigation gives the following elements of μ^2 Bootis; other elements are given for comparison.

	P	T	e	a	Ω	i	λ	Authority
				"	°	°	°	
1	146·649	1851·57	0·2529	1·320	94·7	149·4	87·1	Mädler 1847
2	132·6	60·0	0·490	1·125	166·1	47·5	23·0	Winagradsky 1872
3	314·34	60·68	0·5041	1·761	163·2	41·9	54·2	Hind 1874
4	200·4	65·2	0·51	—	173·0	43·0	20·1	Wilson 1872
5	198·93	65·15	0·4057	—	169·0	40·4	23·6	Klinkerfues
6	190·07	63·51	0·5174	1·560	153·0	44·4	17·7	Doberck 1882
7	259·20	60·31	0·5471	1·47	173·7	39·9	20·1	Doberck 1882
8	256·0	62·15	0·5068	1·057	160·7	35·2	40·9	Pritchard 1878
9	229·42	65·[illegible]	[illegible]	1·265	163·2	41·3	29·[illegible]	See 1895