

THE optical establishment of C. P. Goerz, at Friedenau, Berlin, has just produced its 100,000th lens—a Goerz double anastigmat. To have placed upon the photographic market 100,000 anastigmat lenses in eight years (since 1893) is a noteworthy record.

M. MORENA Y ANDA publishes in the *Transactions* of the "Antonio Alzate" Society of Mexico a table showing the diurnal variability of air temperature at Tacubaya for each month of the fifteen years 1884-1898. The hours of observation are 7 a.m., 2 p.m. and 9 p.m.

DR. MAX VERWORN'S "Allgemeine Physiologie" was welcomed as a valuable work when it appeared in 1894, and its scope and character were described in these columns (vol. li., p. 529). The work has been translated into English, French, Russian and Italian, and has taken its place as a standard textbook of general physiology. The third edition has now been published by Herr Gustav Fischer, of Jena.

THE syndics of the Cambridge University Press have undertaken the publication of a work on the fauna and geography of the Maldive and Laccadive Archipelagoes. An expedition, consisting of Mr. J. Stanley Gardiner, Mr. L. A. Borradaile and Mr. C. Forster Cooper, passed eleven months in these two groups, and the work will contain the scientific results of the visit. The chief object of the expedition was to investigate the interdependence of the physical and biological factors in the formation of atolls and reefs. To this end upwards of 300 dredgings were taken, a large number of soundings were run, and every group of organisms was carefully collected. The land fauna was carefully and exhaustively collected, and, being from an undoubted oceanic area, cannot fail to be of interest. The marine collections fill in an almost unknown gap between the Red Sea and the East Indies, and are the most extensive ever obtained from any coral, oceanic area. The work will be published in eight parts, of which the first will appear in October next.

IN the last *Berichte*, Nencki and Marchlewski describe the very interesting discovery of the close chemical relationship existing between the red colouring matter of the blood and the green chlorophyll of plants. Hæmatoporphyrin a derivative of hæmoglobin, and phyllocyanin obtained from chlorophyll, both yield on reduction hæmopyrrol, which is probably an isobutyl or methyl propyl pyrrol.

IN the newly issued *Bulletin International de l'Académie des Sciences de Cracovie*, L. Bruner publishes the results of his dynamic investigations on the bromination of aromatic compounds. The dependence of the velocity of bromination on the nature and position of the substituting groups in the benzene ring has been studied, and especially the catalytic activity of the most important bromine "carriers." In respect of this capacity, aluminium, chromium, iron and thallium salts, compounds of antimony and phosphorus, and finally iodine have been investigated. It is found that the catalytic activity of the bromine "carriers" depends upon the nature of the substance which is being brominated, so that the arrangement of these bodies in a general series according to their activity is not possible. For benzene and bromobenzene the order is (1) aluminium, (2) thallium, (3) iron salts, (4) iodine, (5) antimony, (6) phosphorus halogens.

THE additions to the Zoological Society's Gardens during the past week include two Green Monkeys (*Cercopithecus callitrichus*) from West Africa, presented respectively by Mr. R. de Courcy Hickton and Mr. S. Prust; a Macaque Monkey (*Macacus cynomolgus*) from India, presented by Mrs. Mould; a Crab-eating Raccoon (*Procyon cancrivorus*) from South America, presented by Mr. B. W. Gardom; a Cuckoo

(*Cuculus canorus*), British, presented by Lieut.-Colonel J. S. Benyon; an Alligator (*Alligator mississippiensis*) from North America, presented by Mr. W. Phillips; two Moccasin Snakes (*Tropidonotus fasciatus*) from North America, presented by Captain J. B. Gilliat; a Great Wallaroo (*Macropus robustus*), four Bridled Wallabies (*Onychogale frenata*) from Australia, two Parrot Finches (*Erythrura psittacea*) from New Caledonia, two Grey-headed Porphyrios (*Porphyrio poliocephalus*), two Ceylonese Terrapins (*Nicoria trijuga*) from India, five Derbian Sternotheres (*Sternotherus derbianus*) from West Africa, two Grey Monitors (*Varanus griseus*) from North Africa, deposited; two Griffon Vultures (*Gyps fulvus*), European, received in exchange; a Wapiti Deer (*Cervus canadensis*), three Glossy Ibises (*Plegadis falcinellus*), bred in the Gardens.

#### OUR ASTRONOMICAL COLUMN.

LIGHT VARIATION OF THE MINOR PLANET (345) TERCIDINA.—In the *Astronomische Nachrichten* (Bd. 156, No. 3726), Herr J. Hartmann gives an account of his investigations of the variation in brightness of this small planet, first pointed out by Prof. Max Wolf, of Heidelberg, in 1899 (*Astronomische Nachrichten*, No. 3704). Two photographs were obtained on April 20 and a third on April 22, all with the large Potsdam refractor. Reproductions are given showing the trails of the planet with reference to the neighbouring stars. The period deduced is as follows:—

Beginning of increase ...	9h. 0m.	} 4h. 10m. = 250m.
Culmination ...	10h. 14m.	
End of increase ...	13h. 10m.	

In the same journal Prof. Max Wolf gives a reproduction of a photograph taken with a 6-inch Voigtlander objective on April 22, the period determined from this being about 240m., which is in close agreement with that determined from the Potsdam photographs. The value determined from the older observations on 1899 November 4 was 290 minutes.

UNITED STATES NAVAL OBSERVATORY.—The recent issue of vol. i. of the second series of *Publications* of the U.S. Naval Observatory contains the first results of work done at the institution since the removal from the old site and the re-mounting of the instruments at the new observatory. In this volume a new method of publication is initiated, the observations made with one instrument and extending over several years being given together instead of all observations being published annually. This first volume contains the reduced observations of the sun, moon, planets and many miscellaneous stars made with the 9-inch and 6-inch transit circles during the years 1894-1899.

#### THE COMPTOMETER.<sup>1</sup>

IN acceding to the editor's request to contribute an article to NATURE upon this instrument, I should like at the outset to express the feeling of curiosity with which any one, familiar with the many arithmometers now so generally in use, must introduce himself to the examination of the comptometer. He will probably know before he begins that it is a mere adding machine; that whereas any arithmometer at each turn of the handle adds or subtracts, as the case may be, any figure set upon the machine, no matter how many digits within the capacity of the machine there may be, or how many times, or how fast within the capacity of the operator he may turn the handle, so that by means of the shifting result-slide multiplication and division can be performed at a rate, and without mental effort, that is a tax upon our imagination, the comptometer is a mere adding machine in which the operator acts upon one key at a time, which adds, each time he presses it, the number on its head to the corresponding digit on the register below. While, therefore, the machine is evidently well adapted for addition, which is so simple an operation that most people believe an instrument for the purpose is not worth the expense of purchasing, it would appear at first that the process of multiplying, to be explained shortly,

<sup>1</sup> Chicago, U.S.A.: Felt and Tarrant Manufacturing Co. Manchester: The Calculating Machine Co.