

liery Ventilation, Alan Bagot (Kegan Paul); Report U.S. Geographical Surveys, vol. vii. Archæology (Washington); Report of the Metropolitan Board of Works, 1881; Botanical Atlas, parts 1 and 2, D. M'Alpine (W. and A. K. Johnston); Ancient Water Lines; D. Milne Home (Edinburgh, Douglas); Laboratory Guide, A. H. Church (Van Voorst); Wolf's Naturwissenschaftlich-Mathematisches Vade-Mecum; Madeira, its Scenery and how to see it, Ellen M. Taylor (Stanford); The Foundations of Mechanics, W. F. Browne (Griffin and Co.); Land Nationalisation, A. R. Wallace (Trübner and Co.).

THE additions to the Zoological Society's Gardens during the past week include a Rhesus Monkey (*Macacus erythreus*) from India, presented by Capt. E. B. Stephens, R.N.; a Pig-tailed Monkey (*Macacus nemestrinus*) from Java, presented by Miss R. M. Stanley; two Striped Hyænas (*Hyæna striatu*) from India, presented by Mr. N. H. Beyts; a Cape Zorilla (*Ictonyx zorilla*) from Cape Colony, presented by Capt. Farmer, s.s. *Pretoria*; a Three-striped Paradoxure (*Paradoxurus trivirgatus*) from India, presented by Mr. R. A. Sterndale; a Puma (*Felis concolor*) from America, presented by Capt. J. Jellicoe, R.M. s.s. *Moselle*; an American Tantalus (*Tantalus loculator*) from Columbia, presented by Mr. H. B. Whitmarsh, R.M. s.s. *Moselle*; a Java Sparrow (*Padda oryziwora*) from Java, presented by Miss M. North; a Landrail (*Crex pratensis*), British, presented by Mr. A. Battiscombe; a White Pelican (*Pelecanus onocrotalus*) from North Africa, presented by Mr. C. G. Bolau; a Lesser White-nosed Monkey (*Cercopithecus petaurista*) from West Africa, an Emu (*Dromæus novæhollandiæ*) from Australia, four Summer Ducks (*Aix sponsa*) from North America, three Brant Geese (*Bernicla brenta*), two Common Wigeons (*Marca penelope*), a Common Buzzard (*Buteo vulgaris*), European, deposited; two Great Anteaters (*Myrmecophaga jubata*) from South America, a Negro Tamarin (*Midas ursulus*) from Guiana, a Purple Heron (*Ardea purpurea*) from Java, a Blue-crowned Hanging Parakeet (*Loriculus galgulus*) from Malacca, two Rose-breasted Grosbeaks (*Hedymeles ludovicianus*) from North America, a Bell's Cinixys (*Cinixys belliana*) from Angola, purchased; a Red Deer (*Cervus elaphus*), born in the Gardens; two Herring Gulls (*Larus argentatus*), two Impeyan Pheasants (*Lophophorus impeyanus*), four Horned Tragopans (*Cerionis satyra*), two Peacock Pheasants (*Polyplectron chinquis*), bred in the Gardens. The following species of insects have emerged in the Insect House during the past week—Silk Moths: *Actias selene*, *Attacus nyctia*, *Attacus cythia*, *Telea polyphemus*; Butterflies: *Limenitis sibylla*, *Argynnis paphia*, *Lycena iolas*; Moths: *Chærocampa elpenor*, *Sphinx pinastri*, *Sesia sphecoformis*, *Sciapteron tabaniforme*, *Callimorpha dominula*.

#### OUR ASTRONOMICAL COLUMN

THE COMET (1882 a).—In a circular issued from Lord Crawford's Observatory on May 29, Dr. Copeland remarks that the spectrum of the nucleus of the present comet deserved the closest attention, as it showed "a sharp bright line coincident with D, as well as strong traces of other bright lines, resembling in appearance those seen in the spectra of  $\gamma$  Cassiopeiæ and allied stars." For some weeks the head had exhibited white light, which might be inherent in the comet or the reflected light of the sun; on May 28 the nucleus began to throw out yellow rays, which on June 1 were also given out by parts of the tail immediately behind the head. Of  $\gamma$  Cassiopeiæ, Secchi writing in 1877, says: "Le plus remarquable de ces étoiles exceptionnelles est  $\gamma$  de Cassiopeë, qui présente les raies spectrales de l'hydrogène, non pas noires, par renversement, mais directement brillantes, curiosité unique jusqu'ici dans tout le ciel. Il n'y a que  $\beta$  de la Lyre qui ait quelquefois les raies brillantes, et encore pas toujours, parce qu'elle est variable"; and he further writes of  $\beta$  Lyræ, "Elle nous a montré une fois, au maximum d'éclat, les raies brillantes de l'hydrogène, comme  $\gamma$  de Cassiopeë, chose que nous n'avons plus vue ensuite, bien que nous l'ayons souvent cherchée."

The Radcliffe meridian observation of the comet on May 20, communicated by Mr. Stone last week, shows that the place calculated from the orbit we then published required only the following small corrections:— $\Delta \alpha \cdot \cos \delta = -1'' \cdot 8$   $\Delta \delta = +4'' \cdot 0$ .

The Kiel observation on May 31 indicates corrections of  $+4''$  in R.A., and  $-19''$  in declination.

The positions given last week for June 10 and 11 are not likely to require material correction. In seeking for the comet in daylight on those dates, care should be taken to focus accurately (for this purpose Mercury or Venus may be available), and a pretty long "dew-cap" or a cardboard tube should be fitted to take off the direct sunlight from the object-glass. At so short a distance from the sun, it will of course be necessary to use a dark glass, but it may be well that the illumination of the field should not be diminished much beyond that which the eye will readily bear. More than one astronomer considered he had missed seeing the first comet of 1847 in daylight on March 30, by using too dark a glass; this was the opinion of Dawes, who could not otherwise explain his want of success.

On August 9 the comet situated near the star 16 Virginis will have the same theoretical intensity of light as at the first Harvard College observations on March 19, setting in London about 1h. 50m. after the sun. On July 5, when not far from Regulus, the intensity of light is equal to that on May 6.

THE TRANSIT OF MERCURY, 1881, NOVEMBER 8.—This phenomenon was fully observed at Sydney, by Mr. H. C. Russell and seven assistants. The mean results are as follows, in Sydney, M.T. :—

	h.	m.	s.
First contact—external ... ..	8	21	57'53 a.m.
„ —internal ... ..	8	23	40'65 a.m.
Last contact—internal ... ..	1	40	25'16 p.m.
„ —external ... ..	1	42	9'22 p.m.

If we calculate with Leverrier's Tables of the Sun and Mercury, and adopt his diameters, the above observations show differences for the internal contacts of  $+22''$ gs. and  $+26''$ gs. respectively.

THE SMALL PLANETS.—The number of known members in this group is now 225, the last one having been discovered by Palisa at Vienna on April 19. It appears to belong to the more distant division of the group, the period of revolution exceeding six years.

THE CORDOBA ZONES.—We have received vol. ii. of "Resultados del Observatorio Nacional Argentino en Córdoba," containing the observations of stars in zones, made during the year 1872, and shall give an early account of this important work, for which astronomy is indebted to Dr. Gould's untiring energy and zeal, and the enlightened liberality of the Argentine Government in promoting the interests of science.

#### CHEMICAL NOTES

IN the Chemical Section of the Meeting of Bohemian Naturalists in Prague, on May 27, B. Brauner (Fellow of The Owens College) communicated a paper on the atomic weight of didymium. The author's former determinations gave the number 146.6, but after further purification he finds now didymium to be 145.4. Both samples were entirely free from any known earth metal. Assuming that both numbers are true, the author remarks that the only explanation which can be given, is that "didymium" is a mixture of two (or more) bodies, one, whose atomic weight is smaller than 145.4, and a second, whose atomic weight is greater than 146.6. Thus it is clear that the chemistry of didymium becomes as complicated as that of "erbium," which was thought to be a simple earth, and later on was split up into the following earths, viz. real (1) erbia, (2) terbia, (3) scandia, (4) ytterbia, (4) thullia, and (6) holmia. The evidence, that the mineral cerite contains other earth metals besides cerium, lanthanum, and didymium, has been given by the author some time ago (*Monatshefte* iii. 1) when he found that the *spark-spectrum* of the portions intermediate between lanthanum and didymium, as well as of those between didymium and cerium, contains *new lines*, not belonging to any known cerite metal. The author is pursuing his researches in the laboratories of the Owens College.

ZIMMERMAN, who recently determined the densities of gaseous uranium tetrachloride, and bromide, has obtained pure metallic uranium, and made measurements of its specific heat, which completely confirm the number 240 as the atomic weight of this metal (*Berichte*, 15, 847).