

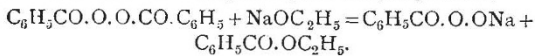
WE have received a number of papers by different officers of the Observatory of Catania. Most of these we have noticed on their first appearance. Among the others, we may mention a valuable memoir, by Mr. S. Arcidiacono, on the eruptive period of Etna from July 19 to August 5, 1899, in which he points out the approximate coincidence of the great explosion on the former day with the total cessation of the flow of lava in Vesuvius and a strong earthquake in Latium, and also an interesting account of the history of the observatories of Catania and Etna.

THE *Mittheilungen aus dem Roemer-Museum*, Hildesheim (No. 11, April 19), includes a paper, by Mr. A. R. Grote, on the phylogeny of the families of butterflies, with a genealogical tree. It is a continuation and amplification of previous papers on the same subject, published by the author in Germany and America, and is mainly based on neuration. Like many authors, Mr. Grote divides the butterflies into two main super-families, Papilionides and Hesperidae; but it will surprise many entomologists to find that all the butterflies except the true Papilionidæ are referred to the Hesperidae.

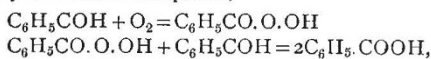
A NEW journal has been started in Berlin, the first number of which bears the title "Laboratorium et Museum," while in the second number the words "et Clinicum" are added. The journal is to be of an international character, and includes articles and notes in English, French and German. The title of the journal is sufficiently suggestive in itself of the contents, which comprise descriptions of new apparatus and reagents, methods of preparation, notices of new books, obituary notices, and lists of trade catalogues, of which the publishers will send copies on application.

DR. FRANCESCO FOSSATI has published in the *Memorie del R. Istituto Lombardo* a bibliography of the writings of Volta. Several such lists have already been published: one in 1813 by Prof. Configliachi, containing the titles of forty-four works; one in 1877 by Prof. Pietro Riccardi, containing sixty titles; while the collection procured by Antinori in 1816 contained sixty-seven writings. The present bibliography is partly the outcome of a suggestion made by Prof. Alessandro Volta, junr., at the Como Electrical Congress last year, and it contains the titles of 231 writings.

IN the current number of the *Berichte* (p. 1569) Baeyer and Villiger describe some of the properties of the new hydride of benzoylsuperoxide,  $C_6H_5CO.O.OH$ . The substance is obtained by the action of sodium ethylate upon benzoylsuperoxide,



The sodium salt of the new compound is formed together with ethyl benzoate. The ethyl benzoate is removed with ether, and the hydride of benzoylsuperoxide separated by acidifying and extracting with chloroform. On distilling the chloroform, the hydride remains as a colourless crystalline mass, which melts at 41-43°. It is very soluble in the ordinary solvents, with the exception of benzene. The smell is penetrating and pungent, resembling, in the dilute state, hypochlorous acid, but not ozone. In its oxidising action on potassium iodide or aniline, and in its reducing action on permanganate, it stands midway between hydrogen peroxide and Caro's reagent (potassium persulphate dissolved in concentrated sulphuric acid). With benzoyl chloride it forms benzoylsuperoxide; with acetic anhydride, benzoylacetylsuperoxide. The oxidation of benzaldehyde to benzoic acid by exposure to air is shown to be due to the agency of this new compound,



which is formed as an intermediate product.

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THE additions to the Zoological Society's Gardens during the past week include a Smooth-headed Capuchin (*Cebus monachus*) from South-east Brazil, presented by Mr. F. Wallace; an Indian Desert Fox (*Canis leucopus*) from Persia, presented by Captain D. J. Leiper; a Small Hill Mynah (*Gracula religiosa*) from India, presented by Captain R. York Heriz, R.N.; two Yellow-bellied Liothrix (*Liothrix luteus*) from India, presented by Miss Petrocochino; a Cockateel (*Calopsittacus novae hollandiae*) from Australia, presented by Mrs. Harry Blades; four Ring-necked Parrakeets (*Palaeornis torquatus*) from India, presented by Mr. J. M. G. Bate; three Chaplain Crows (*Corvus capellanus*) from Southern Persia, presented by Mr. B. T. Finch; two Green Lizards (*Lacerta viridis*), four Viperine Snakes (*Tropidonotus viperinus*), a Smooth Snake (*Coronella austriaca*), two Marbled Newts (*Molge marmorata*), European, presented by the Rev. F. W. Haines; an Orang-outang (*Simia satyrus*, ♂) from Borneo, five — Mole Rats (*Spalax* sp. inc.) from East Africa, a Grey Parrot (*Psittacus erithacus*) from West Africa, a Yellow-cheeked Amazon (*Chrysotis autumnalis*) from Honduras, nine Mountain Witch Ground Doves (*Geotrygon cristata*) from Jamaica, a Hocheur Monkey (*Cercopithecus nictitans*) from West Africa, seven Brazilian Tortoises (*Testudo tabulata*) from South America, five American Box Tortoises (*Cistudo carolina*) from North America, deposited; two Peba Armadillos (*Tatusia peba*) from South America; three Spotted Owls (*Athene brama*) from Madras; three White-throated Finches (*Spermophila albogularis*) from Brazil, a Thick-billed Seed Finch (*Oryzoborus crassirostris*) from South America, a White-eared Conure (*Pyrrhura leucotis*) from Brazil, a Logger-head Turtle (*Thalassochelys caretta*) from the Tropical Seas, purchased; two Burriel Wild Sheep (*Ovis burriel*), a Thar (*Hemitragus eplaiicus*), born in the Gardens; two Pied Mynahs (*Sturnopastor contra*), bred in the Gardens.

#### OUR ASTRONOMICAL COLUMN.

##### ASTRONOMICAL OCCURRENCES IN JULY.

- July 3. 8h. om. to 9h. 11m. B.A.C. 4006 (mag. 5.7) occulted by the moon.
4. 1h. Mercury at greatest elongation (26° 2' east).
5. Jupiter in conjunction with β Scorpii.
8. 11h. 24m. to 11h. 54m. δ Scorpii (mag. 2.5) occulted by the moon.
8. 13h. Jupiter 1° 35' north of the moon.
9. 10h. 50m. to 12h. 2m. 24 Ophiuchi (mag. 5.6) occulted by the moon.
9. Pallas in opposition to the sun.
10. 10h. 18m. to 11h. 10m. 33 Sagittarii (mag. 6.0) occulted by the moon.
10. 12h. 19m. to 13h. 18m. ξ² Sagittarii (mag. 3.5) occulted by the moon.
10. 16h. Saturn 0° 48' south of the moon.
14. 9h. 43m. to 10h. 17m. c¹ Capricorni (mag. 5.2) occulted by the moon.
15. Venus. Illuminated portion of disc, = 0.018. Mars = 0.948.
15. 8h. 29m. to 9h. 21m. κ Aquarii (mag. 5.5) occulted by the moon.
15. 10h. 11m. Minimum of Algol (β Persei).
16. 11h. 3m. 11h. 42m. 16 Piscium (mag. 5.6) occulted by the moon.
21. 13h. 2m. to 13h. 52m. 53 Tauri (mag. 5.5) occulted by the moon.
21. 14h. 53m. to 15h. 12m. D.M. + 20°, 751 (mag. 5.9) occulted by the moon.
25. Giacobini's comet situated close to α Cygni.
28. Epoch of the Aquarid meteoric shower (Radiant 340° - 12°).
31. Ceres in opposition to the sun.

THE NEXT TOTAL ECLIPSE OF THE SUN.—We have recently received *Nautical Almanac Circular* No. 18, issued under the superintendence of Dr. Downing. This pamphlet

contains the local particulars of the next total eclipse of the sun, which takes place on May 17, 1901. From inquiries which have been made, it appears that the positions selected in the eastern portion of the shadow track are those which are most easily accessible. These are all situated in the Malay Archipelago, with the exception of Mauritius. The durations of totality at the various stations recommended are as follow:—

Station.	Long.	Lat.	Duration of Totality. m. s.
Mauritius ... ..	57 33' 2 E.	20 6 S.	3 35
Padang, Sumatra ...	100 20' 5	0 58	6 14
Pontianak, Borneo	109 20	0 1	5 40
Fort Victoria, Am- boyna ... ..	128 11	3 41	4 15
Port Moresby, New Guinea ... ..	147 9	9 28	3 19

The elements on which the computations are based are those published in the *Nautical Almanac* for 1901. A map of the region is included in the circular, by the aid of which other stations than those specified may be selected if desired.

ANCIENT RECORDS OF METEOR SHOWERS.—In his report for the year 1899, M. D. Eginitis, director of the Athens Observatory, gives a short account of some ancient records of meteor showers which appear to be suggestively consistent with the constants of several conspicuous showers of present times.

A shower was mentioned by the patriarch Nicephore as lasting all night, but no exact date is given. From the historical statements given, however, M. Eginitis traces the epoch as the autumn of the year 752. This would suggest it being a shower of Andromedes, and, in fact, counting from the conspicuous falls of Bielids in 1852, 1872 and 1892, the twenty years interval corresponding to three periods of the comet, it is seen that the year 752 would be in such a series. He thus considers this apparition of 752 to have been a Bielid shower of Andromedes.

Seven years previously to this, in 745, the appearance of a great comet was recorded by Théopane and Cédrius.

It may be, however, that the showers of 1852 and later are not from the same swarm as the shower of 752, but that they are the products of slow but continual disintegration of the comet.

Another passage in Cédrius describes a shower in 558, also occurring in the autumn. Apparently connected with this is the observation of a comet in 518, the interval being almost six times the periodic time of Biela's comet, so that here there would appear evidence of a second series of showers, connected with Biela's comet by similarity of period, but occurring at different epochs from the first series mentioned. The modern showers of 1798 and 1838 would fall in this second group.

Théopane in 763 and Domno Alberico in 1122 record falls of shooting stars in the month of April, and these would correspond to the present showers of Lyrid meteors.

A shower chronicled in April 1094 by Alberico cannot be at present connected with any known radiant.

A MODERN UNIVERSITY.<sup>1</sup>

II.

THE constitution of the new University of Birmingham is on the simplest and broadest lines, and appears to offer scope or great developments in the future, some of which can hardly be foreseen at the present time.

The movement for the foundation of a university arose out of the Mason Science College, founded by Sir Josiah Mason in 1875, just a quarter of a century ago; though it was not till five years later that the college was open to receive students. In 1892 an amalgamation was effected with the Queen's College Faculty of Medicine, and in 1897 the whole was incorporated as one body under the Mason University College Act. The Senate consists of twenty-seven members, and there are a large number of lecturers and demonstrators; but that it should have already developed into a university is a very remarkable fact, and a sign of great enterprise and energy on the part of the community among which the college has done its work; indeed, it is unlikely that this rapid development could have taken place unless it had been fortunate enough to secure the interest and personal influence of a prominent Minister of the Crown.

<sup>1</sup> Continued from p. 186.

The Faculties of the University already provided for are science, arts, medicine and commerce, but provision is made for the addition of other faculties by Statute later on. Each faculty holds its own meetings, and is presided over by its elected dean.

The assemblage of professors constitutes the "Senate," as usual. The "Council," or acting governing body under the Court, consists of the deans of the faculties, five nominees of the Birmingham City Council, twelve members appointed by the Court of Governors, and lastly of the chief officials of the University, *i.e.* the Chancellor, the Vice-chancellor, the Pro-Vice-Chancellor, the Treasurer, the Principal, and the Vice-Principal. The Court of Governors is a very widely representative body, consisting of all the chief officials in the neighbourhood of Birmingham, the head-masters of the principal schools, ten of the Members of Parliament for the boroughs and counties in the Midland district, a nominee of each of the other English Universities (including the University of Wales), a member from each of the Midland County Councils, five nominees by the Birmingham City Council, certain named life governors and donors of certain sums, all the professors of the University, six persons elected by the Guild of Graduates, three by the Guild of Undergraduates, and eleven members appointed by the voluntary elementary schools of the neighbourhood.

It is hardly possible to imagine a wider basis of representation than the one adopted for the Court of Governors of this University.

Among the executive officers there is to be a Secretary, and also a Registrar appointed by the Council; the Vice-Principal and one of the deans, *i.e.* the Dean of the Faculty of Medicine, are likewise to be appointed by the Council. There is to be a Principal appointed by the Crown; there is also to be a Vice-Chancellor elected by the Court of Governors, and there is to be a Chancellor; the first Chancellor being the Right Hon. Joseph Chamberlain, and the first Vice-Principal Prof. R. S. Heath.

Concerning the objects to which all this machinery will be applied, no doubt a good deal will at the beginning be conducted on lines with which we are more or less familiar, though there appears to be no desire to imitate other universities, but rather a hope that it may be possible to strike out on a new line, and develop a broad system of national education suited to modern times, and to the practical requirements of life in an active city of the British Empire.

To this end a committee of inquiry was formed, and a deputation sent to various colleges and universities, chiefly in the United States and Canada, in order to study what was going on there. This body reported to the management committee connected with the establishment of the University of Birmingham, and their report constitutes an important and informing document. In it they say that:—

"Their object has been the teaching of science in its application to industry, and in the first place to the industries of the city and district, coupled with such technical instruction in handicrafts as will enable the students to complete their course in the university itself."

They classify the industries of the district as follows:—mining, metallurgy, engineering, and chemical trades, and non-metallic trades.

They recommend that there shall be chairs of mining, metallurgy, engineering, and applied chemistry. They further recommend that the students should be put through a very thorough course, consisting largely no doubt of a study of mathematics, physics, pure chemistry, and geology, as taught at present, but finishing with a specifically technical course, making it four years in all. A shorter course would likewise be permissible, but it appears would not lead to a degree.

They say the students should be divided into two classes, viz.:—

(1) "Those taking a four-years' course in mechanical (including electrical), civil or mining engineering, metallurgy or applied chemistry, who would study for a master's degree in their respective subjects. At the conclusion of this course facilities would be offered for further study and research to those who could give the time or should wish to proceed to the doctor's degree."

(2) "Those taking a course of from one to three years in any of the above subjects, with a view to the practical application of the teaching to a particular industry. With such students, less time could be devoted to theory, as attention would have to