

variability of the species. Like all who have studied these creatures, he finds that *Ammophila* is the most remarkable, the most intelligent and interesting; and the most attractive of his twenty-four photographs refer to this wonderful wasp.

THE *Festschrift Möbius*⁴ contains four entomological articles. The first is by Dr. K. Kraepelin, on 'Die geographische Verbreitung der Scolopendriden,' pp. 167-194. The author tabulates the distribution of each subfamily, from which it is seen that the neotropical region is especially rich in Cryptoptinæ, the oriental region in Otostigminæ, while the African and neotropical regions have equal claims as the home of the true *Scolopendras*. The family, as a whole, is more fully represented in South America than elsewhere, with seventy species, nearly equally divided among the three subfamilies. It may be noted that although the palæarctic region has fewer species than the nearctic, yet it has more endemic species.

The second article is 'Ueber die Entwicklungsstufen der Steinläufer Lithobiidæ, und Beiträge zur Kenntnis der Chilopoden,' pp. 195-298, 3 pls., by Dr. K. W. Verhoeff. He describes the immature stages of several species of *Lithobius*, showing the increase in number of segments, legs, antennal joints and ocelli in each stage. He finds eight stages before maturity, the last four of which he designates as follows: fifth, agenitalis; sixth, immaturus; seventh, præmaturus; eighth, pseudomaturus. The number of legs does not increase beyond the 'agenitalis' stage, while the antennal joints and ocelli increase in number to maturity. The remainder of his article consists of notes on the morphology of various parts of the body, and an account of a case of cannibalism.

Dr. H. J. Kolbe presents the third article, 'Ueber die Lebensweise und die geographische Verbreitung der coprophagen Lamellicornier,' pp. 475-594, 3 maps. The author gives a résumé of the known life history of the various species, and then enters a long discussion of their geographical distribution; tabulating

the subfamilies and genera (with number of species) for each region. From these studies he divides the Palæarctic region into four subregions: Europæo-Siberian, Mediterranean, Turkestan and Chino-Japanese. The African region he subdivides into Tropical, South African and Madagascar. The Indian is divided into Upper Indian (including South China and Formosa), Lower Indian (including Ceylon) and Indonian (including the Philippine and Sunda Islands). The Australian region he divides into Melanesian, New Holland (including islands of the South Seas) and New Zealand. The Neotropical fauna is grouped in the Argentino-Patagonian (including Chile), the Brazilian, the Central American and the Antillean subregions. The Nearctic he divides into but two subregions, the cismontane, and the transmontane or Californian. Africa appears to be the most fertile region for these insects.

The last article is by Th. Kuhlitz, on 'Beitrag zur Kenntnis der Metamorphose geflügelter Heteropteren,' pp. 595-616, 13 figs. He treats of the morphology of the thorax as indicating the age and development of the individual; of the relation of the scutellum to the wings; and, as less important, the shape of the head and abdomen, and the color as indicative of maturity. NATHAN BANKS.

ROBERT OGDEN DOREMUS.

PROBABLY no educator has ever left more pupils to mourn his loss and recall his many estimable qualities as a teacher and lecturer than Dr. Robert Ogden Doremus, who died on March 22, 1906, in the eighty-third year of his age.

Dr. Doremus was born in New York City, on January 11, 1824. He was descended on his father's side from Anneke Jans, who early settled in New York and on his mother's side from Robert Ogden, one of the founders of Princeton University. He was at one time a student in Columbia College, but completed his college education at New York University, receiving the degree of B.A. in 1842, the degree of M.A. in 1845, the degree of M.D. in 1850, and the degree of LL.D. in 1871.

Dr. Doremus early manifested a special in-

⁴ *Zool. Jahrb., Suppl.*, Bd. 8, 1905.

terest in natural science, especially physics and chemistry. From 1843 to 1850 he was assistant to Dr. John W. Draper, the distinguished English chemist who made his home in New York, and he had charge of the chemical laboratory of the medical department of the university. He spent some time in Paris pursuing the study of electrometallurgy. In 1849 he was elected professor of chemistry in the New York College of Pharmacy, and in 1850 he was one of the founders of the New York Medical College, where he equipped a chemical laboratory for medical students. Later he was instrumental in founding both the Long Island Hospital and Medical College and the Bellevue Medical College and occupied the chair of chemistry and toxicology in both institutions. He was for many years professor of natural history in the College of the City of New York, and about 1882 was made professor of chemistry and physics, a position which he retained until he gave up teaching in 1903. At the College of the City of New York he established a large chemical laboratory in which hosts of students received practical instruction. Upon his retirement from the duties of instructor he had completed sixty years of continuous work as a teacher of chemistry and physics and it is doubtful if any other instructor in this country has ever lectured to so many pupils.

Professor Doremus paid special attention to toxicology and distinguished himself by the thoroughness of his work in medico-legal investigations and the improvements which he made in some of the most important tests for poisons.

He made some important improvements in the preparation of cartridges of compressed gunpowder for army use, which attracted especial attention in France where he was invited to make experiments before the Emperor Napoleon III. and his generals. Dr. Doremus was especially interested in the application of chemistry and physics to the practical affairs of life and was often consulted by manufacturers and by sanitary authorities.

Dr. Doremus was especially successful as a public lecturer, he was a man of commanding

presence, most agreeable voice, and eloquent and clear in his presentation of the facts and principles of science. He spared no trouble or expense in the preparation of his experiments, and many old New Yorkers will remember with pleasure the brilliant and dazzling experiments which he made in the Academy of Music in demonstrating the phenomena of light and heat as developed by various forms of combustion and by electricity. Dr. Doremus was very musical in his tastes, a skillful performer on the cornet, and was several times president of the Philharmonic Society. He was warm, cordial and friendly in his relations with others and endeared himself to the hearts of all who knew him.

CHARLES F. CHANDLER.

A STANDARD AGRICULTURAL COURSE.

At the recent meeting of the Association of American Agricultural Colleges and Experiment Stations held in Washington, D. C., the subject of courses in agriculture and horticulture and allied subjects was discussed by Professor F. W. Rane, of the New Hampshire College, before the section on college work and administration.

The speaker recommended that the fundamental sciences of the course should be placed in the first two years and that the requirements be uniform for all the various institutions teaching agriculture. He showed that at present from an extensive study of comparative courses in the various institutions, there exists no uniformity, subjects being given in some institutions in the freshman year, while in others the same subject is offered in the senior year. After emphasizing the importance of having the basal or fundamental work the same, he would then require sufficient of the applied or economic subjects to give the agricultural student a general broad grasp of agriculture, as shown in the accompanying table, the student then being allowed a free and unrestrained will to elect in the junior and senior years the subject that most appeals to his tastes and likings.

The cultural subjects recommended by the speaker are practically those recommended by