

THE little town of Massa Maritima (Tuscany), says the *Journal of the Society of Arts*, sets an example which would be well to be followed by many larger and better known towns, both in Italy and this country. In 1867 the municipality of Massa purchased the interesting collection of minerals, models of mining machinery, and specimens of tools used in mines in various countries from Signor Teodoro Haupt, a well-known mining engineer of Florence, together with a complete series of maps and plans of most of the mines in Tuscany. This forms the nucleus of the museum, which has since been enriched by a collection of the birds and animals found in the province, the donation of a medical man residing in the town, and their value is considerably enhanced by being well arranged and tabled with both common and scientific names. The library now contains about 6,000 volumes, some of which are of great value, as being extremely rare, and relating to the history of the republic of which Massa was once the capital. The archaeological department contains a very beautiful Etruscan funeral urn.

THE additions to the Zoological Society's Gardens during the past week include four Bull Frogs (*Rana mugiens*) from Nova Scotia, presented by Dr. B. Sanderson, F.R.S.; two white-handed Gibbons (*Hylobates lar*) from the Malay Peninsula, presented by Sir H. Ord, C.B.; two Griffin Vultures (*Cypus fulvus*) and a Golden Eagle (*Aquila chrysaetos*), European, presented by Mr. A. J. White; two Rough-legged Buzzards (*Archibuteo lagopus*), European, presented by Mr. A. B. Hepburn; a Green Monkey (*Cercopithecus callitrichus*) from India; and a Bonnet Monkey (*Macacus radiatus*) from India, presented by Miss Bradshaw; a Barasingha Deer (*Cervus duvaucelii*) from the Himalayas, received in exchange; and a Hairy Armadillo (*Dasyurus villosus*) from La Plata, deposited.

SCIENTIFIC SERIALS

Der Naturforscher, Oct. 1873.—Among the abstracted matter in this number we find an account of recent experiments by M. Exner, to determine the "reaction time" of the sensorium. Some part of the body having been stimulated, the person immediately made a signal by pressing a key with the right hand. Marks were produced on a blackened cylinder, both at stimulation and at signalling, and the interval was noted. The reaction time (which ranged between 0.1295 and 0.3576 sec. in 7 persons) seems independent of age, and is shortest in those who have the habit of concentration. The tables also show it to have been shortest in stimulation of the eye with an induction shock; then follow, in order, electric shock to finger of left hand, sudden sound, electric shock to forehead, shock to right-hand finger, sight of an electric spark; and lastly, shock to toes of left foot. M. Exner analyses the reaction time into 7 "moments."—In chemistry we have some important observations on the non-luminous flame of the Bunsen burner, by M. Blochmann, and on vinegar-ferment and its cause, by MM. Mayer and Knierim, who think the action of mycoderma aceti probably physiological, and that it is a kind of bacterium which shows a mobile and an immobile state; the latter producing rapid acetification. Further, the vinegar-production occurs without the presence of nitrogenous substances, though less slowly than where they are present.—An interesting question in plant-geography is that as to the transport of seeds by ocean-currents, and in other ways independent of human agency. M. Thuret has been experimenting on this in Antibes. Having tried 251 different species, he knows of only two kinds of bare seed which are capable of floating, *Maurandia* and *Phormium*. A long immersion in sea-water does not always destroy the vitality of seeds. Out of 24 species immersed more than a year, at least 3 germinated afterwards as vigorously as seeds kept quite dry.—We find astronomical notes on the spectra of the two new comets, III. and IV., of 1873, and on the connection of solar protuberances with auroras (Tacchini); and in meteorology there is a notice of Dr. Koppen's valuable researches on an eleven years' period of temperature.—In physics, the subjects are: short galvanic currents and electrical discharges (Edlund), armatures of magnetic bundles (Jamin), and molecular rotatory power of vinous acid and its salts (Landolt).—A review of Hæckel's *Die Kalkschwämme*, by M. v. Martens, is worthy of notice.

SOCIETIES AND ACADEMIES

LONDON

Zoological Society, Dec. 2.—Dr. A. Günther, F.R.S. vice-president, in the chair. A communication was read from Dr. James Hector, containing an account of the complete skeleton of *Cnemidornis calcitrans*, Owen, and showing its affinity to the *Natatores*.—Prof. Owen, F.R.S., read a paper containing a restoration of the skeleton of *Cnemidornis calcitrans*, Owen, with remarks on its affinities to the Lamelirostral group, and forming the twentieth part of his series of memoirs of extinct birds of the genus *Dinornis* and its allies.—A communication was read from Mr. W. H. Hudson, containing an account of the habits of the Pipit (*Anthus correndera*) of the Argentine Republic.—A communication was read from Mr. A. G. Butler, containing a revision of the species of the genus *Protopogonius*.—A communication was read from Dr. J. E. Gray, F.R.S., on the skulls of some seals from Japan, with description of a new species, proposed to be called *Eumetopias elongata*.—Mr. P. L. Sclater read a paper on some birds collected in Peru by Mr. H. Whately, being the seventh of the series of articles upon this subject.—A communication was read from Mr. Henry Whately, containing additional notes on humming-birds collected in High Peru.—A communication was read from Mr. R. Swinhoe, containing remarks on the Black Albatross with flesh-coloured bill, of the China Seas.—Mr. Garrod read a paper on the visceral anatomy of the Ground Rat (*Aulacodus swinzerianus*).

Linnean Society, Dec. 4.—Mr. G. Bentham, president, in the chair.—Revision of the genera and species of Tulipæ, by Mr. J. G. Baker. In this tribe of Liliacæ the author includes the caulescent capsular genera with distinct perianth-segments and leafy stems bulbous at the base, viz., *Fritillaria*, *Tulipa*, *Lilium*, *Calochortus*, *Erythronium*, and *Lloydia*. The characters presented by the different orders were described *seriatim* in the paper. In the structure of the underground stems there are four leading types, viz., (1) a squamose perennial bulb, consisting, when mature, of a large number of thin flat scales tightly pressed against one another, and arranged spirally round a central axis which is not produced either vertically or horizontally, as exemplified in all the Old-world species of *Lilium*; (2) in most of the species of *Fritillaria* we have a pair only of hemispherical scales, half as thick as broad, pressed against the base of the flower-stem, these scales being the bases of single leaves which die down before the flower-stem is produced; (3) an annual laminated truncated bulb occurs generally in *Tulipa*, *Calochortus*, and *Eu-Lloydia*; (4) in the section *Gageopsis* of *Lloydia* we have a truncated corn. The leaves are very uniform throughout the tribe, with the exception of a section of *Lilium*, *Cardocrinum*, with long clasping petioles. The perianth leaves are all coloured except in *Calochortus*, when the three outer segments are sepaloïd and lengthened into points. The stamens are always six in number and nearly equal in length, hypogynous, and the dehiscence of the anther never properly introrse, but lateral, exactly as in *Colchicum*. In the capsule, *Calochortus* differs from the other genera in its septicidal dehiscence. As regards the connection between Liliacæ and Colchicacæ Mr. Baker is disposed to lay less stress than before on the evidence of any sharp line of demarcation between the orders, all the characters usually ascribed to the latter order being found in some of the genera of Liliacæ. In its Geographical Distribution the tribe is spread throughout the north temperate zone; only one species, *Lloydia serotina*, is really boreal and Alpine; the southern limits are Mexico, the Philippines, South China, the Neilgherries, and the southern borders of the Mediterranean; the principal concentration of species is in California and Japan; nearly all are hardy in this climate. *Lilium* with 46, and *Fritillaria* with 55 species, have the distribution of the tribe; the latter stopping eastwards at the Rocky Mountains, while the former reaches the Atlantic sea-board; *Tulipa*, with 48 species, is restricted to the Old World, reaching from Spain, Britain, and Scandinavia to Japan and the Himalayas; *Calochortus*, with 21 species, is confined to Mexico and the west side of the Rocky Mountains; of the 5 species of *Erythronium*, 1 is confined to the Old World and 4 to the New; the 3 species of *Gageopsis* are Oriental and Siberian; while *Lloydia serotina* is the most widely spread of all the Liliacæ, and a unique instance of a petaloïd Monocotyledon of the North Temperate Zone with almost universal high mountains and Arctic distribution.

Chemical Society, Dec. 4.—Dr. Frankland, F.R.S., vice-president, in the chair.—A paper entitled Mineralogical Notices,