

oxidise the alkaline solution of triamido-ortcin by exposure to the air. Trinitro-ortcin is also reduced by treatment with tin and hydrochloric acid, or zinc and hydrochloric or sulphuric acid.

*Amido-diimido-ortcin hydrochloride*.—The hydrochloride obtained in the preparation of amido-diimido-ortcin may be purified by crystallisation from hot water; but as heat decomposes solutions of the salts of this base, it is better to precipitate a cold solution of the acetate by a slight excess of hydrochloric acid, in which the hydrochloride is but slightly soluble; the precipitate should be thoroughly washed with alcohol, pressed and dried.

*Amido-diimido-ortcin sulphate* is readily prepared by precipitating a dilute solution of the acetate with sulphuric acid, when it forms minute lustrous plates which are purple by reflected light.

*Amido-diimido-ortcin nitrate* is prepared, like the sulphate, by adding a slight excess of nitric acid to a moderately strong solution of the acetate and washing the precipitate with alcohol.

*Amido-diimido-ortcin acetate* dissolves readily in acetic acid, and on carefully evaporating the solution at a low temperature, the acetate is obtained in ill-defined crystalline plates having a purple iridescence. It is readily soluble in cold water, but only slightly soluble in glacial acetic acid.

*Amido-diimido-ortcin oxalate*.—Very slightly soluble purple scales obtained by precipitating a solution of the acetate with oxalic acid.

*Amido-diimido-ortcin picrate*.—On adding a solution of picric acid to a dilute solution of amido-diimido-ortcin acetate and washing the precipitate with alcohol, the picrate is obtained in iridescent green needles and plates. It is insoluble in alcohol, and but slightly soluble in water.

Prof. Owen read a paper "On the Fossil Mammals of Australia.—Part VIII. Family *Macropodidae*; Genera *Macropus*, *Osphranter*, *Phascolagus*, *Sthenurus*, and *Protemnodon*."

In the present part of the series of papers on the fossil mammals of Australia, the author enters upon the description and determination of the fossils referable to the family of Kangaroos (*Macropodidae*); restricting, however, the latter term to the species in which the molar teeth have two transverse ridges for the chief character of their grinding-surface, and excluding the Potoroos (*Hipsiprymidae*), in which the working-surface of the molars is formed by four tubercles in two transverse pairs. The large extinct species of Kangaroo indicated under the names *Macropus Titan*, *M. Atlas*, and *M. Anak* in former publications here receive further elucidation of their specific distinction from any known living Kangaroos and of the grounds (according to the value assigned thereto by present zoologists) for referring two of these (*M. Atlas*, *M. Anak*) to distinct subgenera of *Macropodidae*. The author then enters on the elucidation, aided by the facts premised, of *Macropus Titan*, *M. affinis*, *Osphranter Cooperi*, *O. Gouldii*, *Phascolagus altus*, *Sthenurus*, *Atlas S. Brehus*, *Protemnodon Anak*, *P. Og*, *P. Mimas*, and *P. Rachus*. The maxillary, mandibular, and dental characters of these extinct species are illustrated by the subjects of eight plates.

Zoological Society, January 21, Prof. Newton, F.R.S., V.P., in the chair.—Dr. Günther, F.R.S., exhibited and made remarks on a supposed ancient Egyptian skull.—A communication was read from the Rev. John T. Gulick, containing remarks on the classification of the family *Achatinellinae*; which he regarded as containing ten well established genera, seven of which were arboreal and three terrestrial in habit.—Mr. A. H. Garrod, read a paper on the visceral anatomy of the Sumatran rhinoceros (*Ceratohinus sumatrensis*) based on a specimen of this species lately living in the Society's gardens.—Mr. A. D. Bartlett gave an account of the birth of a Sumatran rhinoceros which had taken place on board the *Orchis* at the Victoria Docks on December 7. The mother and an adult male of the animal along with her had been brought from Singapore, but the male had died on the passage. The young one suckled freely and lived for about a fortnight, and was said to have been accidentally killed.—A communication was read from Surgeon-Major Francis Day on some new or imperfectly known fishes of India and Burma.—A communication was read from the Rev. O. P. Cambridge on some new genera and species of Araneidea, chiefly from Mr. Thwaites' Ceylonese collections.—A communication was read from Dr. J. E. Gray containing a description of the skeleton of the New Zealand Right Whale (*Macleayius australiensis*) and of other whales. Dr. Gray concluded with a general list of the known species of the marine mammalia of New Zealand.—A communication was read from Mr. G. B. Sowerby, giving de-

scriptions of several new shells of the genus *Conus*.—A communication was read from Dr. J. C. Cox, containing descriptions of new land shells from Australia and the Solomon Islands.

Anthropological Institute, Jan. 21. Annual general meeting.—Sir John Lubbock, Bart, F.R.S., president, in the chair. The Report of Council showed that the income for 1872 was 1,238*l.* 5*s.* 4*d.*, and the expenditure 1,084*l.* 18*s.*, leaving a balance in hand of 153*l.* 7*s.* 4*d.*; and that after deducting the expenses of the year, the debt of the Institute had been reduced by 249*l.* 9*s.* 6*d.* The president delivered an address, in which he reviewed the chief anthropological works of the past year by continental and American authors. He also drew attention to the continued destruction of prehistoric monuments, and made further suggestions for their preservation. Prof. George Busk, F.R.S., was elected president.

Meteorological Society, Jan. 15.—Dr. Tripe, president, in the chair. The first paper read was on solar radiation, by Rev. Fenwick W. Stow, M.A. This paper treated of the comparison of the measure of solar radiation obtained by a Herschel's actinometer with that indicated by the difference between the temperature of a blackened bulb *in vacuo*, and that of the air in the shade; the comparison of the latter with the difference of temperature of blackened and unblackened bulbs *in vacuo*; suggestions for a standard solar thermometer or actinometer; errors of thermometers *in vacuo*, and the necessity of comparing them; experiments with blackened bulbs in glass air-jackets; and the objects to be aimed at in investigations of solar radiation, and the importance of such investigations to meteorology and physics. The next paper, also by the Rev. F. W. Stow, entitled "On Temperature in Sun and Shade," was an account of experiments with different thermometers exposed (1) to full sun, (2) to sun, but not to sky in zenith, (3) to sky in zenith, but not to sun, (4) on open thermometer stand, and (5) in louver board screen. The author found that ordinary mercurial thermometers are affected more by radiation from the ground than from the other sources of heat; and concluded with some remarks on open stands and louver board screens.—The other communications read were—"On the 'Pocky' Cloud observed July 27, 1872," by J. S. Harding, F.M.S.; "Account of the Hurricane which passed over the Nichol Bay district of Western Australia on March 20, 1872," by R. J. Sholl, Government Resident; and an "Account of a phenomenon observed on board H.M.S. *Fawn*, on May 16, 1872," by H. P. Kneivitt.

Institution of Civil Engineers, Jan. 14.—Mr. Thomas Hawksley, president, in the chair. Colonel W. H. Greathed, C.B., R.E., Chief Engineer of Irrigation to the Government of the North-Western Provinces, read a paper "On the Practice and Results of Irrigation in Northern India." The object of the Paper was to describe what had been done and what was now doing in that portion of Upper India where irrigation had been longest practised, and on the largest scale.

## GLASGOW

Geological Society, Jan. 9.—James Bryce, LL.D., F.G.S., read a paper on "The Upper Secondary Rocks of Sky and Raasay." After referring to the observations which have previously been published on the Lias and Oolite of Sky, Dr. Bryce noticed the great geological interval which separates these upper Secondary rocks in Scotland from the deposits on which they rest. In the east of Scotland they are found overlying the Old Red sandstone; but in Skye and Raasay their base is formed of the Torridon or Cambrian Sandstone, in a great trough or hollow, in which they seem to have been deposited. He then described at length the general succession of beds observed in Skye, from the lower Lias at Lucy Bay to the middle Lias at Broadford, Pabba, and Raasay, and the upper Lias and inferior Oolite in the neighbourhood of Portree. Passing northwards these were succeeded by beds still higher in the scale, till, at Loch Staffin on the one side, and Uig on the other, members of the upper Oolite were found. He had also found indications of what appeared to be the equivalents of the "Purbeck beds" in England, and the fossils from these were now under careful examination. The paper was illustrated by maps and carefully-prepared sections, together with a tabular view of the beds referred to, and a copious list of the fossils belonging to each horizon, including some new species not yet named.