

ties in cultivated soils. We might be disposed to eliminate the potash as also usually sufficiently prevalent. The fact that straw is almost invariably returned to arable land is in itself a safeguard against the exhaustion of potash; and the considerable percentage found in most soils, especially those of argillaceous character, points to the same conclusion. The farmer has then chiefly to consider the supply of phosphates and of nitrates, and, with regard to these two, Prof. Wagner thinks that the former ought to be in excess of what is required, and that the farmer should equally devote his attention to the proper supply and application of nitrates to the soil. The recommendation that phosphates should be in excess is based on the observation that growth is seldom regular. It depends on climatic conditions, and sometimes is arrested by drought or low temperature for two or three weeks, while in well cultivated and well fertilized ground vegetation makes extraordinary progress in three or four days. The supply of phosphates ought therefore to be in excess of what may be required under ordinary conditions of growth, and should be abundant enough to supply the plant under the most rapid conditions of growth. The conclusion is that phosphates may be applied liberally and without hesitation or limit, *i.e.*, without scientific accuracy. The case of nitrates is different, as they are so easily available and so freely mobile in the soil, that the plant has no difficulty in appropriating them. The nitrates probably find their way into the plant before they are required, and are stored up and elaborated gradually as the plant takes up further supplies of mineral nutriment. The rapidity with which they disappear and their extraordinary effect mark the nitrates out as the chief object of study in manuring land.

JOHN WRIGHTSON.

#### THE BURIAL CUSTOMS OF THE AINOS.

MR. BACHELOR, to whose investigations on the subject of the Ainos of Yezo we have frequently referred, writes, in a recent issue of the *Japan Weekly Mail*, on the burial customs of this race. He says that as soon as a person dies, a blazing fire is made, the corpse is dressed in its best garments, which are neatly laid up, and is laid lengthways on the right-hand side of the fireplace. The relatives and friends of the deceased sit around the remaining parts of the fireplace, and usually they are so numerous as to fill the hut. In all cases many sacred symbols (*inao*) are made, and placed around the hut and the dead body. Mr. Bachelor has seen the corpse of a woman laid out. She was well dressed, and had her utensils and paraphernalia about her (the rings and beads being, in this instance, laid upon her bosom), and was shod with pieces of white calico which Mrs. Bachelor had, a few days previously, given to the husband of the deceased to bind up his wounded foot. Any white material seems to be especially welcome to the Ainos for wrapping up the bodies of their dead. When the body has been properly dressed, and when the necessary eating-vessels or hunting materials are placed in position, a cake made of millet, or a cup of boiled rice and some wine, are placed by its side, and the spirit of the departed is supposed to eat up the essence of these things. Then the goddess of fire is implored to take charge of the spirit and lead it safely to the Creator of the world and the possessor of heaven, and she receives various messages to the Deity setting forth the praises of the dead and extolling his many virtues. Millet cakes and wine are then handed round to every member of the assembled company, and each of them offers two or three drops of the wine to the spirit of the dead, then drinks a little, and pours what remains before the fire as an offering to the fire-goddess, to whom they have not ceased to pray; then part of the millet cake is eaten, and the remainder buried in the ashes on the hearth, each person burying a little piece. After the burial these scraps are collected and carried out of the hut and placed before the east window, which is regarded as the sacred place. The corpse is then carefully rolled up in a mat, neatly tied up, attached to a pole, and carried to the grave by two men. The mourners follow after the corpse, in single file, each carrying something to be buried in the grave, the men leading and the women following them. The grave is from  $2\frac{1}{2}$  to  $3\frac{1}{2}$  feet deep, and round the inside of it stakes are driven, and over them and at the bottom of the grave mats are placed. Then the body is laid in the grave, with numerous little knick-knacks—cups, rings, beads, a saucepan and some clothing being buried with the woman, a bow and quiver, an eating and a drinking cup, tobacco, a pipe, a knife with the men, and play-

things with the children. These things are always broken before being put into the grave, and it is noticeable that they are not usually the best the deceased had during life. Everything is then closely covered with mats; pieces of wood are placed so as to form a kind of roof, and on this the earth is piled. A pole is generally stuck at the foot of the grave to mark the spot. No prayers are offered up during burial. The mourners then return to the hut, where the men pray, make *inao*, *i.e.* sacred symbols, eat, drink, and get drunk. The dead body is never allowed to remain in the house longer than one day; and, once the funeral is over, the name of the departed is never mentioned.

#### UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

THE following is the list of Scholarships, prizes, and Associateships awarded in July 1888, at the Normal School of Science and Royal School of Mines, South Kensington, for the session 1887-88:—

First Year's Scholarships: Samuel H. Studley, Sydney Wood, William S. Jarratt, and George N. Huntly. Second Year's Scholarships: Savannah J. Speak and William Tate.

Edward Forbes Medal and Prize of Books for Biology: Arthur M. Davies. Murchison Prize of Books for Geology: William Tate and Samuel Truscott. The Murchison Medal was not awarded. Tyndall Prize of Books for Physics: William Watson. De la Beche Medal for Mining: Edmund L. Hope. Bessemer Medal and Prize of Books for Metallurgy: Harry C. Jenkins. Frank Hatton Prize of Books for Chemistry: James W. Rodger.

Prizes of Books given by the Science and Art Department:—Mechanics, James Whitaker; Astronomical Physics, William S. Jarratt and William Watson; Practical Chemistry, James W. Rodger and James Young; Mining, John M. Beckwith. The prize for Principles of Agriculture and Agricultural Chemistry was not awarded.

Associateships (Normal School of Science):—Mechanics, 1st Class: James Whitaker and William Kelsall. Physics, 1st Class: Harry E. Hadley and Philip L. Gray; 2nd Class: Herbert Anderson and Philip L. Coultas. Chemistry, 1st Class: James W. Rodger, James Young, Barker North, and Harold E. Hey; 2nd Class: William MacDonal, George Grace, Francis J. Hardy, George C. McMurtry, and Henry Sowerbills. Biology, 1st Class: Arthur M. Davies. Geology, 1st Class: Thomas H. Holland.

Associateships (Royal School of Mines):—Metallurgy, 1st Class: Harry C. Jenkins, Thomas Clarkson, and William McNeill; 2nd Class: Alfred Howard. Mining, 1st Class: Edmund L. Hope, John M. Beckwith, James A. Chalmers, William F. Thomas, Sydney Allingham, Charles G. Thompson, John Leechman, Frederick H. P. Creswell, Ernest Lichtenburg; 2nd Class: Ferdinand F. L. Dielyrch, Henry L. Lewis, Henry B. Budgett, William F. Hamley, and Harold Macandrew.

#### SOCIETIES AND ACADEMIES.

LONDON.

Royal Society, April 26.—“On the Coagulation of the Blood.” Preliminary Communication. By W. D. Halliburton, M.D., B.Sc., Assistant Professor of Physiology, University College, London. Communicated by Prof. E. A. Schäfer, F.R.S. (From the Physiological Laboratory, University College, London.)

The present research was directed to determining the nature of the ferment that produces the change of fibrinogen into fibrin.

Some preliminary experiments showed that the following proteids were present in lymph cells (obtained from lymphatic glands).

- (1) A mucin-like proteid similar to that described by Miescher in pus which swells up into a jelly-like substance when mixed with solutions of sodium chloride or magnesium sulphate. This is a nucleo-albumin.
- (2) Two g'obulins.
- (3) An albumin.

The Globulins.—There is a small quantity of a globulin which