

Under the conditions of the study no statistical significance has been involved in the grading process with samples varying from 10 to 90 percent. In determining the yield from samples of the best developed plants of the plot, results have given an erroneous estimate; while using samples of the plants from the inner rows or from plants taken at random over different fertility plots, 10 percent has been found satisfactory. In estimating quality with samples taken from best developed plants or taken from the average plants of the inner rows or from the plants taken at random under low and high fertility conditions, results have shown that any sized samples used were satisfactorily representative.

The influence of seasons has not shown any particular significance; on the other hand the personal factor has shown some.

M. Sc.

ANATOMY

RICHARD M. H. POWER

THE UNSTRIATED MUSCLE FIBRE OF THE FEMALE PELVIS.

An imperfect smooth muscle diaphragm is present and embedded in fibrous tissue lying between the pelvic peritoneum and the superior surface of the levator ani muscle. The bands which constitute this diaphragm may be divided into anterior, lateral and posterior groups converging on the cervix uteri. The attachments of these to the visceral and pelvic walls are discussed as well as their functional significance, in terms of the individual bands and the musculature as a whole. Operative procedures for the correction of sacro-pubic herniae are criticised and their success or failure interpreted in the light of the dual nature of the parametrium and the pelvic subperitoneal tissue.

M. Sc.

CHEMISTRY

JOSEPH CYRIL PULLMAN

THE SYNTHESIS OF LONG CHAIN POLYETHYLENE ETHER
GLYCOLS AND THE NATURE OF POLYMERIZATION.

This investigation was carried out with a view to obtaining further information on the nature of polymerization by preparing, synthetically, a series of polyethylene ether glycols for comparison with similar products obtained by the direct polymerization of ethylene oxide. The polyethylene ether glycols were prepared by a condensation reaction between one mole of a dichloro derivative and two moles of a monosodium derivative of lower polyethylene ether glycols. The nona, octadeca and heptacosa ethylene ether glycols and also the dichloro derivatives of the first two compounds were prepared. It was found that the synthesis of solid polyethylene ether glycols can be carried out more readily than that of the liquid polyethylene ether glycols.

M. Sc.

ZOOLOGY

L. R. RICHARDSON

THE SKELETON, AND ITS DEVELOPMENT IN
CATOSTOMUS COMMERSONII, (L.).

The development of the skeleton in *Catostomus commersonii* is described from a study of a series of growth stages prepared by the Dawson modification of the Schultze method for transparent preparations.

The technique has been thoroughly worked out, and is outlined as definitely as possible.

Observations on the cartilaginous precursors of the skeleton, and a description of significant features of the adult skeleton are included.

Reconstructions of the chondrocranium in two stages are described. A comparison of the latter with the formation of the centers of ossification of the skull shows a close similarity between the development of the two; a feature also shown in the development of the branchial skeleton.

The vertebral complex, and its development, are figured and described. In *Catostomus* the complex is relatively simple, and is typical in its formation from the elements of the anterior vertebrae.

A serial development of bone is described in the fins.

A detailed description is given of the relations of the articular feet of the rays to the radial elements of the fins.

M. Sc.

CHEMISTRY

JAMES ALEXANDER SCARROW

AN IMPROVED SEMI-MICRO KJELDAHL METHOD FOR
ESTIMATION OF ORGANIC NITROGEN.

Carbonyl compounds are usually identified in this laboratory by means of their 2, 4-dinitrophenylhydrazones. In most cases these latter do not yield the calculated amount of NH_2 when analyzed for