

The sequence of the "phase of minor intrusions" is uncertain. Diabase dikes cut the granite. Other minor intrusions are quartz porphyries.

No volcanic or true diorites, as described by earlier observers occur.

Amphibolisation and albitisation in the gabbros are considered to be contact metamorphic effects.

M. Sc.

EXPERIMENTAL MEDICINE

JOHN KERSHMAN

THE EVOLUTION OF CELL TYPES IN THE
CENTRAL NERVOUS SYSTEM—MICROGLIA.

Although the existence of microglia as a definite entity is well established and its genesis has been studied in laboratory animals (rabbit, cat, mouse, rat, etc.) there is no account in the literature of the cytogenesis of microglia in the human central nervous system.

The literature on microglia has been reviewed and analyzed under certain headings and for the sake of completeness and differentiation the other cells in the central nervous system have been included.

Microglia have been demonstrated in a series of human embryos and foetuses ranging in prenatal age from eight weeks to seven months. In addition, certain nests of microglioblasts have been demonstrated and these occur in relation to mesodermal tissue and for the most part in connection with areas where the ectodermal cells of the developing central nervous system do not go on to form neuronal and neuroglia cells. It has been shown that microglia are mesodermal in origin and the hypothesis has been advanced suggesting an ontogenetic meso-ectodermal interchange in the developing central nervous system.

M. Sc.

CHEMISTRY

GERALD L. LAROCQUE

THE DETERMINATION OF THE SOLUBILITY OF LIME IN
WATER AND OF THE SORPTION OF LIME ON CELLULOSE.

The object was to determine the solubility of calcium hydroxide in water from 0° to 30° C. The reason for this investigation was the large discrepancies obtained by earlier workers and the need of accurate solubility data in order to investigate other lime-water systems.

A physico-chemical method was devised where the solubilities are determined in a completely glass-enclosed system free from interfering atmospheric gases and by an electrical conductivity method which is unaffected by small colloidal particles, the main source of error in previous investigations. The results are claimed to be more accurate than any others previously listed.

In an appendix to the thesis, some preliminary experiments on the sorption of lime on cellulose illustrate the practical value of the solubility investigation.

M. Sc.

BOTANY

JACOB LEVITT

THE PHYSIOLOGY OF COLD RESISTANCE IN PLANTS.

Cabbages were hardened by a five-day exposure to 5° C. Rate of thawing did not affect the amount of frost injury.

The juice of hardened plants had a freezing point .1 to .2° C. lower than the unhardened.

No difference could be detected in the dye absorption of the juice of hardened and non hardened plants.

Hardening tended to cause a slight increase in pH, about .1 to .2.

Exposure to ammonia or acetic acid vapours had no effect on freezing injury.

The buffering power and isoelectric point were unchanged by the hardening. Juice of hardened plants tended to more nearly complete precipitation on either side of the isoelectric point.

Cold resistance varied directly with the quantity of calcium and inversely with the amount of nitrogen available. Phosphorus and magnesium deficiency tended to decrease hardness, but potassium deficiency had no effect. Calcium deficiency increased succulence.