was as follows : liver 1:1, spleen 2:3, testis 3:1 in the controls, and liver 2:1 and testis 3:1 in the irradiated ones. The radioactivity of the inorganic phosphorus determined in the acid-soluble fraction was never more than 20 per cent of the radioactivity found in the soluble fraction.

At those time-intervals the deoxyribonucleic acid from spleen, liver and testis was isolated by the method of Schmidt and Tannhauser[7] and the specific activity determined and expressed in c.p.m. per mgm. of deoxyribonucleic acid (calculated from phosphorus content). Only deoxyribonucleic acid from spleen of control animals shows a significant specific activity, but not before the third day after the injection. The whole deoxyribonucleic acid from the spleen contains at this time-interval only 3 per cent of the injected radioactivity.

These very preliminary results lead us to the following conclusions. The injected highly polymerized spleen deoxyribonucleic acid labelled with phosphorus-32 seems to be at least 50 per cent degraded to tetranucleotides and smaller fractions. It is very likely that this degradation takes place in the peritoneum. The fact that 30–40 per cent of the labelled deoxyribonucleic acid is found as fragments precipitable with perchloric acid or trichloracetic acid in blood and organ extracts and the fact that only deoxyribonucleic acid from spleen was labelled for a relatively short time-period could suggest that those larger fragments were used for the synthesis of spleen deoxyribonucleic acid. This might also suggest an organ-specific localization of larger fragments of labelled deoxyribonucleic acid. Also, if one compares the incorporation of labelled inorganic phosphate to spleen deoxyribonucleic acid and the intraperitoneally injected spleen labelled acid, there is a 300 times greater efficiency in the latter.

It is of interest to mention that highly polymerized liver labelled deoxyribonucleic acid injected intraperitoneally under the same conditions was degraded into smaller fragments as observed in our laboratory[8].

However, more information is needed to understand better this phenomenon. Experiments in this direction are in progress and will be published elsewhere.

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Tamara A. Hudnik-Plevnik
Vladimir R. Glišin
Marta M. Simić

'Boris Kidrich' Laboratory of Radiobiology,
Institute of Nuclear Sciences,
P.B. 522, Belgrade.

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BIOLOGY

A Nucleus of Nerve Cells in the Ferret Pituitary Gland

The neural process of the pituitary gland is a derivative of the neural tube, and in adult animals remains structurally continuous with the hypothalamus by means of a stalk consisting of nerve fibres. Until recently it was considered to be a true endocrine gland ; but today it is widely held that the process serves as an organ for the storage and release of hormones elaborated by the neurones of certain hypothalamic nuclei[1].

Structurally the process consists chiefly of nerve fibres containing neurosecretory material, and cells of unknown function called 'pituicytes'. Scattered nerve cells have also been described in the neural process of some forms, including the dog[2] and human[3].

The neural process of the ferret consists of an upper central zone which is directly continuous with the stalk, and resembles it structurally ; and a more vascular peripheral zone which contains a high concentration of neurosecretory material. Occasional scattered nerve cells are found throughout the central zone. In the junctional region where the stalk becomes continuous with the main neural process these cells are aggregated to form a distinct nucleus, which measures approximately 0·5 mm. in its greatest extent. The cells are typical small and medium-sized neurones, whose oval nuclei contain prominent nucleoli, and whose cytoplasm shows granules of Nissl substance. It has not been possible to demonstrate neurosecretory material within the cytoplasm of these cells.

The significance of this collection of nerve cells, the occurrence of which has to the best of my knowledge not been previously described, is problematical. The neurones may represent a displaced hypothalamic nucleus, and receive direct fibres from other parts of the central nervous system ; or alternatively they may constitute a relay for fibres, not necessarily neurosecretory in nature, passing from the hypothalamus to the neural process. In either case they would be likely, through the influence of these axons, to play a part in the control exerted by the central nervous system over the neurohypophysis, and possibly over the whole pituitary gland. A third possibility is that these neurones give rise to centripetal fibres, and are concerned in the mediation of a 'feedback' effect, through which the neural process could influence the central nervous system.

R. L. Holmes

Department of Anatomy,
University of Birmingham.

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GENETICS AND CYTOLOGY

Interspecific Hybrids of *Lycopersicum*

The production of fertile hybrids between members of the species *Lycopersicum esculentum* and *L. peruvianum* var. *dentatum* has been achieved at the Plant Breeding Laboratory, Melbourne, Victoria, by the adoption of a technique involving the reciprocal grafting of parent plants prior to hybridization. Eight self-fertile interspecific hybrids, produced by this method during the period 1955–58, have been observed and selected from F_1 to F_4.

F_1 hybrids and selected segregates from later generations have been backcrossed to *L. esculentum*. Resistance to the tomato spotted wilt virus and to *Fusarium oxysporium* var. *lycopersici* has been transmitted to *esculentum* type segregates. There is no evidence of linkage of the genes determining size of fruit and those for disease resistance.

The parent material was cleft-grafted in the early stages of growth, the scion being at first true leaf