

from a *sylvestris* sperm nucleus; but it is also possible, although not very probable, that it has originated parthenogenetically from an egg cell having only *sylvestris* chromosomes. Such an egg cell can be produced if all the *sylvestris* chromosomes (12) separate and move toward one pole, while the *Tabacum* chromosomes (24) move toward the other pole during the reduction division in the F_1 hybrid. The chance for such a chromosomal distribution during the reduction division is very small. When we consider the fact that parthenogenesis is a rare occurrence—only one egg cell (haploid) may develop parthenogenetically out of several thousands—it seems very improbable that our *sylvestris* haploid has such an origin.

Detailed morphological description of the haploid and its cytogenetical behaviour will be given elsewhere.

DONTCHO KOSTOFF.

Institute of Genetics,
Academy of Sciences of U.S.S.R.,
Leningrad.

¹ Kostoff, Dontcho. "An Androgenic *Nicotiana* Haploid", *Z. Zellforsch.*, **9**, 640, 1929.

² Clausen, R. E. and Lammerts, W. E., "Interspecific Hybridisation in *Nicotiana*. (10) Haploid and Diploid Merogony". *Amer. Nat.*, **63**, 279, 1929.

Influence of Thyroid Preparations on the Plumage of Birds

In an earlier communication¹ we described experiments on the supposed influence of the thyroid hormone on the moulting mechanism of feathers in aquatic birds which manifested very striking resistance to thyroid feeding and to the injection of thallium acetate. After controlling the thyroid preparations which produced the shedding of feathers in hens and caused metamorphosis in tadpoles, the thyroid glands of ducks and geese have been examined. The great difference observed between them and the thyroid gland of the chicken was found to be due chiefly to different anatomical structure and to tremendous development of the corpuscula epibranchialia (corpuscula epithelialia or parathyroidea of other authors) in ducks and geese.

It seemed to us therefore that the corpuscula epibranchialia may have a neutralising effect on the influence of thyroid in our experimental aquatic birds. It is also possible to presume such a neutralising influence in the testis hormone of drakes as suggested in the interesting publication of Mr. R. George Jaap, of the University of Wisconsin, in "Poultry Science", referring to testis enlargement and thyroid administration in ducks, although we used in our experiment both male and female ducks.

Bearing in mind this possibility, we repeated the experiment now with a uniform batch (in regard to origin, age and so on) of hens divided into four groups treated as follows: (1) fed with thyroid preparations; (2) fed with thyroid preparations and given injections of extract (in Ringer's solution) of corpuscula epibranchialia of geese and ducks; (3) fed with thyroid preparations and given injections of testis hormone prepared from drakes' testes; and (4) a control group given injections of Ringer's solution only and including other hens without special treatment.

The result was again very striking. While hens of the first and third groups began on the 8-9th day to lose their feathers and on the 12th day there were all the symptoms of severe moulting, the group

injected with the extract of corpuscula epibranchialia as well as the control animals remained quite resistant to thyroid feeding.

This experiment was repeated twice with the same result and at the same time histological examination was made of the corpuscula epibranchialia. Some interesting results were observed; for example, tadpoles given a very small dose of the extract of corpuscula taken from geese died on the second-third day, but the control tadpole fed on goose's thyroid gland and other thyroid preparations continued alive and active.

A detailed report of these experiments is in preparation.

R. PRAWOCHEŃSKI.
B. SLIZYŃSKI.

Zootechnical Laboratory,
Jagellonian University,
Cracow, Poland.
May 20.

¹ NATURE, **133**, 482, Sept. 23, 1933.

Energy Spectrum of Positive Electrons ejected by Radioactive Nitrogen

THE velocities of positive electrons, emitted by boron when bombarded by α -particles of radium C' with a range reduced to 6.3 cm., were investigated by the magnetic focusing method, the electrons being detected by coincidences in two contiguous Geiger-Müller counters¹. The measurements could only be extended up to the value of $H\rho = 7800$. The energy distribution obtained is shown in Fig. 1. For each point of the curve, 100-200 positive electrons were counted. The natural background was 20 per cent of the measured value.

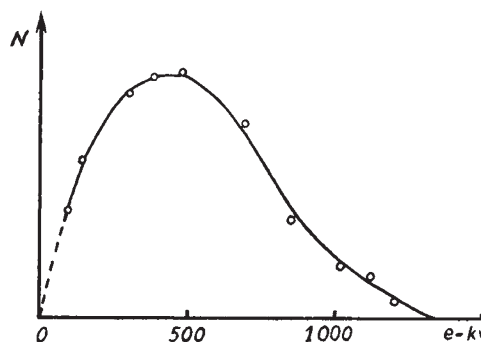
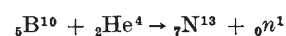


FIG. 1.

The shape of the curve is similar to that for the β -spectrum of radium E. The limit of the spectrum corresponds to about 1.3×10^6 ev. A similar energy distribution was found by Anderson and Neddermeyer in the case of carbon bombarded by deuterons². Thus the half period³ and the energy spectrum of positive electrons of radioactive nitrogen do not depend on the method of its production.

The most probable way of producing N^{13} in our experiments may be assumed to be:



while in the case of Crane and Lauritsen, measured by Neddermeyer and Anderson, the supposed reaction was:

