

into the cytoplasm, where they break up into finely granular masses called yolk nuclei. The yolk nuclei become more or less diffused through the cytoplasm, and, especially toward the egg membrane, give rise to the yolk platelets, which are at first minute, but grow during the winter to large size. Thus the nuclealbumin of the yolk platelets is derived from the nucleoproteids of the nucleus.¹ Whereas I am entirely ignorant of the steps by which a nucleoproteid might be changed into a nuclealbumin, the phosphorus content of the egg nuclealbumins (.4–1.5 per cent.) is about the same as that of the native nucleoproteids studied by Halliburton.² We might compare the migrating nucleoli to the trophochromatin of the protozoa and metazoa.³ Whereas the nucleolus is more acidophilous to stains than the idiochromatin (chromosomes), it is more basophilous than the general cytoplasm, and I see no objection to calling it trophochromatin. Goldschmidt⁴ found the chromidia (trophochromatin) of some protozoa to give rise to "glanzkörper" or glycogen granules which might be compared in function to the yolk platelets of the frog's egg.

Whereas I found that the nucleoli were of greater specific gravity than the nuclear sap, and could be thrown out of the germinal vesicle by centrifugal force, there is no indication that gravity aids in the normal extrusion of the nucleoli. Such migration of nucleoli is a wide-spread phenomenon in animals and plants.⁵

J. F. McCLENDON

UNIVERSITY OF MISSOURI,

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THE STRUCTURE OF LILY PISTILS

IN an extended study of the structure of the pistils of Liliaceæ some results have been reached that warrant the publication of this

¹ The amphibian nucleolus is said by Carnoy and Lebrun to contain a small amount of nuclealbumin.

² *Jour. of Physiol.*, Vols. 17 and 18.

³ Cf. Moroff, *Arch. f. Zellforschung*, Vol. 2.

⁴ *Arch. f. Protistenkunde*, Vol. 5.

⁵ Walker and Tozier, *Quart. Jour. of Exper. Physiol.*, Vol. 2.

preliminary note pending the completion of the work.

The pistils of the lilies are in general alike. However, certain differences exist among them (1) in regard to the formation of the partition walls of the ovary and (2) in regard to the development of the ovules. It is the prevailing opinion among botanists that the margins of the carpels in the Liliaceæ infold to form the partition walls of the ovary and also to produce the ovules. This is true of some lilies but it is not true of all lilies. It has been found that certain lilies develop the partition walls of their ovaries, also their ovules, from the middle portion of their carpels. In this type of ovule-production the midribs of the carpels become thicker, push in to the central axis of the ovary, unite and produce the ovules.

The following plants have been found to develop their ovules from the midribs of their carpels: *Lilium longiflorum* Thunb., *Lilium longiflorum eximium* Nichol., *Lilium candidum* Linn., *Erythronium albidum* Nutt., *Convallaria majalis* Linn., *Tradescantia bracteata* Small, *Zebrina pendulata* Schnitzl., *Tulipa* sp.

CHARLES E. TEMPLE

THE UNIVERSITY OF NEBRASKA

SOCIETIES AND ACADEMIES

THE IOWA ACADEMY OF SCIENCE

THE twenty-third annual meeting of the Iowa Academy of Science was held at the State University, Iowa City, on April 31 and May 1. A public meeting was held on the evening of April 30 for the presentation of the address of the president, Professor Samuel Calvin, on "The Work of the Iowa Geological Survey," and a lecture by Professor William A. Locy, of Northwestern University, on "The Service of Zoology to Intellectual Progress." Before the beginning of the evening program Professor C. E. Seashore gave demonstrations of the tonoscope in his laboratory.

In the progress of the two sessions of the academy the following papers were presented:

Comet C, 1908 (Morehouse): D. W. MOREHOUSE.

An account of the comet discovered in September, 1908, while photographing at the Yerkes Observatory.

The Polyporaceæ of Fayette, Iowa: GUY WEST WILSON.