

At the same time the nucleus, which occupied a central position in the spermatogonium and early spermatocyte, moves towards the outer side. As the spermatid becomes drawn out and elongated, the Golgi element is observed to lie in the middle of its body for some time, but soon it moves away towards the tail end. In the early spermatozoon the Golgi element breaks up, its parts gradually becoming indistinguishable from mitochondria. In the elongated spermatid, in which the Golgi body has moved to the posterior end, an acrosome can be made out as a barely distinguishable structure applied to the tip of the nucleus. There is no connexion between the Golgi body and acrosome.

Gatenby<sup>10</sup> has described an acrosome in the spermatids of *Limnæa stagnalis*. This acrosome is, however, figured as a thin ridge on the nuclear membrane of a spermatid and appears indistinguishable from it. In this respect, conditions in the spermatids of *Vaginula* and *Limnæa* appear to be similar. It is obvious, in any case, that the secretion of the acrosome cannot be the only function of the Golgi body, since in the spermatids of *Vaginula* there is quite a large Golgi element, but it takes no part in acrosome formation.

The mitochondria remain scattered haphazard throughout the course of spermatogenesis.

A detailed account will be published elsewhere.

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<sup>1</sup> Baker, J. R., *Quart. J. Micro. Sci.*, **85**, 1 (1944).

<sup>2</sup> Thomas, O. L., *Quart. J. Micro. Sci.*, **88**, 445 (1947).

<sup>3</sup> Thomas, O. L., *Quart. J. Micro. Sci.*, **89**, 333 (1948).

<sup>4</sup> Parat, M., and Painlevé, J., *C.R. Acad. Sci., Paris*, **179**, 612 (1924).

<sup>5</sup> Baker, J. R., *Quart. J. Micro. Sci.*, **90**, 293 (1949).

<sup>6</sup> Parat, M., *C.R. de L'Assoc. Anat.*, **23**, 383 (1928).

<sup>7</sup> Palade, G. E., and Claude, A., *J. Morph.*, **85**, 35 (1949).

<sup>8</sup> Palade, G. E., and Claude, A., *J. Morph.*, **85**, 71 (1949).

<sup>9</sup> Schlotke, E., *Z. Mikr.-Anat. Forsch.*, **24**, 101 (1931).

<sup>10</sup> Gatenby, J. B., *Quart. J. Micro. Sci.*, **63**, 445 (1919).

In Mann-Kopsch preparations, the cytoplasmic inclusion studied by Dr. Srivastava reduces osmium tetroxide and is thus blackened on the outside. Presumably it is mainly for this reason that he calls it a 'Golgi body'. Let us consider whether it is appropriate to apply the name of Golgi to a body having the characters described by Srivastava.

A wide variety of different objects in cells are sometimes blackened by the classical 'Golgi-techniques' (for example, the nuclear membrane, the cell membrane, mitochondria and granules of various kinds). It was in the nerve-cells of vertebrates that Golgi<sup>1</sup> described his apparatus. It is still uncertain whether there exists in the living cell a network that gives rise to the 'reticular apparatus' of classical Golgi preparations. Adamstone and Taylor<sup>2</sup> claim to have seen a network in the living nerve-cell of mammals by phase-contrast microscopy, though other careful workers have not succeeded in doing so. Let us assume, as a basis for discussion, that this network exists. Should we homologize Dr. Srivastava's *sphere* with this *network*? One can make the following statements about the supposed network of the nerve-cell of vertebrates with confidence:

(1) It is not easily observable by ordinary microscopy during the life of the cell.

(2) It is not stainable in life by methylene blue or Nile blue.

(3) After fixation in Champy's fluid or in Flemming's fluid without acetic acid, it is not stainable by acid fuchsin nor by iron hæmatoxylin.

(4) After fixation with Bouin's fluid, it is not stainable by gentian violet.

Therefore, if the network exists, it is of an entirely different nature from the object studied by Dr. Srivastava. His work thus provides support for the suggestion I made recently in these pages<sup>3</sup> that cytologists should discontinue the use of the expressions 'Golgi apparatus', 'Golgi body', etc. Cytoplasmic inclusions of quite different kinds are being lumped together under Golgi's name.

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<sup>1</sup> Golgi, C., *Arch. Ital. Biol.*, **30**, 60 (1898).

<sup>2</sup> Adamstone, F. B., and Taylor, A. B., *J. Morph.*, **92**, 513 (1953).

<sup>3</sup> Baker, J. R., *Nature*, **172**, 617 (1953).

### Gregory's "Notæ in Isaaci Newtoni Principia Philosophiæ"

DURING a recent survey of the Gregory Collection presented to the University of Aberdeen by Sir Ian Forbes-Leith, Bart., of Fyvie, I came across a bound manuscript of David Gregory's "Notæ in Isaaci Newtoni Principia Philosophiæ". A page-by-page superficial collation of this manuscript with that presented to the University of Edinburgh by J. C. Gregory, the well-known professor of the practice of medicine, led me to the conclusion that it is a somewhat later copy of the Edinburgh manuscript, the differences noted being only such as were to be expected in copying. The fact that the Aberdeen manuscript is composite as to hand, paper and binding, and the presence of a few glosses in a hand distinct from those of the text, suggest, however, that it might be worth more detailed study; particularly in view of the fact that its existence was evidently unknown to Rigaud<sup>1</sup> or the writer of the notice of David Gregory in the Dictionary of National Biography.

Prof. H. W. Turnbull, to whom I communicated the discovery, tells me that he was unacquainted with any manuscript except that at Edinburgh, but that he believed that the original draft was lodged with the Royal Society. Through the courtesy of Sir Harold Hartley, I have now learnt that there is a manuscript with the title "Notæ in Newtoni Principia Mathematica Philosophiæ Naturalis". I hope to examine this, since if it is indeed the original draft, it is difficult to account for the fact that it is nowhere referred to in the literature. Rigaud seems to be referring to a manuscript other than the Edinburgh, but does not state its location. In the meantime, I should be very grateful for information as to the existence of any further manuscripts of the work, or other relevant details which might help to clear the matter up. I wish to acknowledge the courteous assistance given to me by Dr. Sharp and his staff, of the Library of the University of Edinburgh.

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<sup>1</sup> Rigaud, S. P., "Historical Essay on the First Publication of Sir Isaac Newton's Principia", p. 98 *passim* (Oxford, 1838).