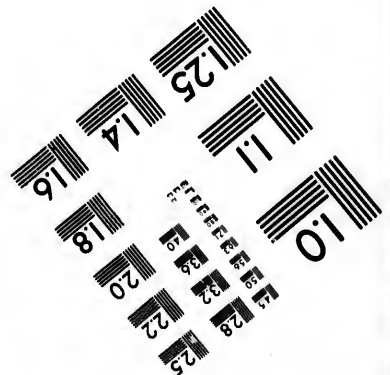
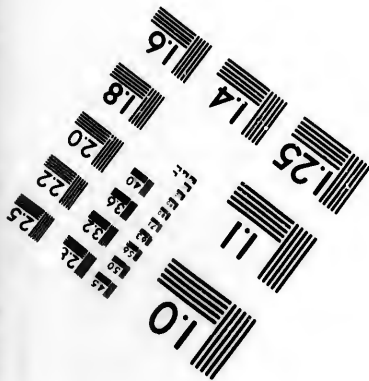
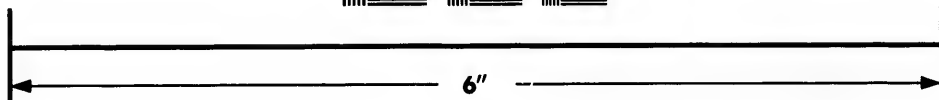
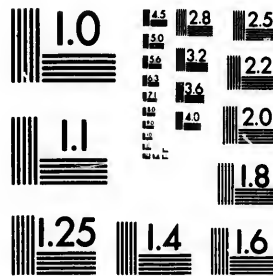


**IMAGE EVALUATION  
TEST TARGET (MT-3)**



**Photographic  
Sciences  
Corporation**

23 WEST MAIN STREET  
WEBSTER, N.Y. 14580  
(716) 872-4503

**CIHM/ICMH  
Microfiche  
Series.**

**CIHM/ICMH  
Collection de  
microfiches.**



**Canadian Institute for Historical Microreproductions / Institut canadien de microreproductions historiques**

**© 1985**

Technical and Bibliographic Notes/Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- |  |  |
|--|--|
| <input type="checkbox"/> Coloured covers/<br>Couverture de couleur   | <input type="checkbox"/> Coloured pages/<br>Pages de couleur   |
| <input type="checkbox"/> Covers damaged/<br>Couverture endommagée  | <input type="checkbox"/> Pages damaged/<br>Pages endommagées   |
| <input type="checkbox"/> Covers restored and/or laminated/<br>Couverture restaurée et/ou pelliculée  | <input type="checkbox"/> Pages restored and/or laminated/<br>Pages restaurées et/ou pelliculées  |
| <input type="checkbox"/> Cover title missing/<br>Le titre de couverture manque   | <input checked="" type="checkbox"/> Pages discoloured, stained or foxed/<br>Pages décolorées, tachetées ou piquées   |
| <input type="checkbox"/> Coloured maps/<br>Cartes géographiques en couleur   | <input type="checkbox"/> Pages detached/<br>Pages détachées  |
| <input type="checkbox"/> Coloured ink (i.e. other than blue or black)/<br>Encre de couleur (i.e. autre que bleue ou noire)   | <input checked="" type="checkbox"/> Showthrough/<br>Transparence   |
| <input type="checkbox"/> Coloured plates and/or illustrations/<br>Planches et/ou illustrations en couleur  | <input type="checkbox"/> Quality of print varies/<br>Qualité inégale de l'impression   |
| <input type="checkbox"/> Bound with other material/<br>Relié avec d'autres documents   | <input type="checkbox"/> Includes supplementary material/<br>Comprend du matériel supplémentaire   |
| <input type="checkbox"/> Tight binding may cause shadows or distortion<br>along interior margin/<br>Le reliure serrée peut causer de l'ombre ou de la<br>distorsion le long de la marge intérieure   | <input type="checkbox"/> Only edition available/<br>Seule édition disponible   |
| <input type="checkbox"/> Blank leaves added during restoration may<br>appear within the text. Whenever possible, these<br>have been omitted from filming/<br>Il se peut que certaines pages blanches ajoutées<br>lors d'une restauration apparaissent dans le texte,<br>mais, lorsque cela était possible, ces pages n'ont<br>pas été filmées. | <input type="checkbox"/> Pages wholly or partially obscured by errata<br>slips, tissues, etc., have been refilmed to<br>ensure the best possible image/<br>Les pages totalement ou partiellement<br>obscurcies par un feuillet d'errata, une pelure,<br>etc., ont été filmées à nouveau de façon à<br>obtenir la meilleure image possible. |
| <input type="checkbox"/> Additional comments:/<br>Commentaires supplémentaires:  |  |

This item is filmed at the reduction ratio checked below/  
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	14X	18X	22X	26X	30X
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12X	16X	20X	24X	28X	32X

The copy filmed here has been reproduced thanks to the generosity of:

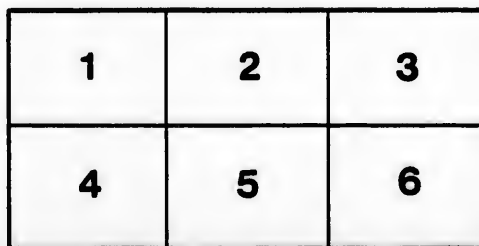
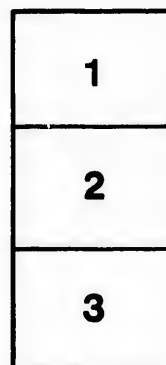
Medical Library  
McGill University  
Montreal

The images appearing here are the best quality possible considering the condition and legibility of the original copy and in keeping with the filming contract specifications.

Original copies in printed paper covers are filmed beginning with the front cover and ending on the last page with a printed or illustrated impression, or the back cover when appropriate. All other original copies are filmed beginning on the first page with a printed or illustrated impression, and ending on the last page with a printed or illustrated impression.

The last recorded frame on each microfiche shall contain the symbol  $\rightarrow$  (meaning "CONTINUED"), or the symbol  $\nabla$  (meaning "END"), whichever applies.

Maps, plates, charts, etc., may be filmed at different reduction ratios. Those too large to be entirely included in one exposure are filmed beginning in the upper left hand corner, left to right and top to bottom, as many frames as required. The following diagrams illustrate the method:



L'exemplaire filmé fut reproduit grâce à la générosité de:

Medical Library  
McGill University  
Montreal

Les images suivantes ont été reproduites avec le plus grand soin, compte tenu de la condition et de la netteté de l'exemplaire filmé, et en conformité avec les conditions du contrat de filmage.

Les exemplaires originaux dont la couverture en papier est imprimée sont filmés en commençant par le premier plat et en terminant soit par la dernière page qui comporte une empreinte d'impression ou d'illustration, soit par le second plat, selon le cas. Tous les autres exemplaires originaux sont filmés en commençant par la première page qui comporte une empreinte d'impression ou d'illustration et en terminant par la dernière page qui comporte une telle empreinte.

Un des symboles suivants apparaîtra sur la dernière image de chaque microfiche, selon le cas: le symbole  $\rightarrow$  signifie "A SUIVRE", le symbole  $\nabla$  signifie "FIN".

Les cartes, planches, tableaux, etc., peuvent être filmés à des taux de réduction différents. Lorsque le document est trop grand pour être reproduit en un seul cliché, il est filmé à partir de l'angle supérieur gauche, de gauche à droite, et de haut en bas, en prenant le nombre d'images nécessaire. Les diagrammes suivants illustrent la méthode.

No, Macallum, A. B.

From the Author

with his Compliments

H. S. Binkett.



Note on the Diagnosis, by Means of  
the Microscope, of Paget's Disease  
of the Nipple and Breast.

BY DR. A. B. MACALLUM,

Lecturer in Physiology, University of Toronto.



Reprinted from THE CANADIAN PRACTITIONER, October 16, 1890,  
by THE J. F. BRYANT CO., Ltd., 58 Bay Street, Toronto.



NOTE ON THE DIAGNOSIS, BY MEANS  
OF THE MICROSCOPE, OF PAGET'S  
DISEASE OF THE NIPPLE AND  
BREAST.

BY DR. A. B. MACALLUM,

Lecturer in Physiology, University of Toronto.

In Paget's disease the carcinomatous condition of the breast is generally supposed to follow on a long-standing affection of the surface of the nipple, which is comparable in certain respects to chronic eczema, but which, on histological examination, presents characters not observable in the latter trouble. As the usual methods of treatment for eczema are useless here, it is of importance at the outset to determine whether the case in hand is ordinary eczema or the disease in question. The ordinary methods of diagnosis have been hitherto purely clinical: the long duration of the supposedly eczematous condition, the infrequent itching, the feel of the nipple like a coin under a cloth, etc. Recently Darier and Wickham have proposed a new test,\*

---

\*Darier—*Comptes Rendus de la Societe de Biologie de Paris* of the 13th April, 1899.

Wickham—*Archives de Medicine Experimentale*, January, 1890; also his monograph, *Maladie de la Peau dite Maladie de Paget*, Masson, Paris, 1890.

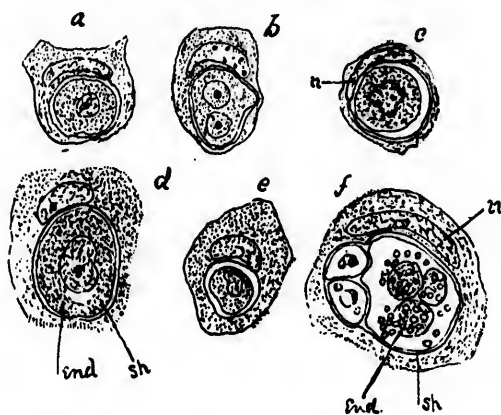
See also Prof. R. Ramsay Wright's lecture on Sporozoa, *PRACTITIONER*, January, 1890.

which, on account of its easy application, may diminish the importance of the other means of diagnosis. It depends on the occurrence inside the epithelial cells in the affected part of peculiar elements, which are considered by these observers as parasitic sporozoa (or psorospermiae) and the condition of the nipple is, accordingly, from their point of view, a case of psorospermiosis. The bodies are usually found in, but not confined to, the lower layers of the epidermis, in the "eczematous" part, and they may be observed in the cells filling up the galactophorous ducts. They are usually large, and they may, according to Darier, measure in diameter from one-third to even one-half the thickness of the stratum mucosum of the epidermis where they are placed. If now, one of the small crusts or scabs from the diseased nipple, examined with appropriate methods of preparation under the microscope, should be found to contain the bodies in question in greater or less abundance, the diagnosis of Paget's disease is, these authors claim, established.

I have had two cases of Paget's disease of the breast for examination, and from one case—that of Dr. Burt's, of Paris, Ont.—I made a large number of sections, which furnished all the material necessary for a full study of these bodies. In the second case, which was under the care of Dr. Primrose, in the Toronto General Hospital, I had the privilege of examining



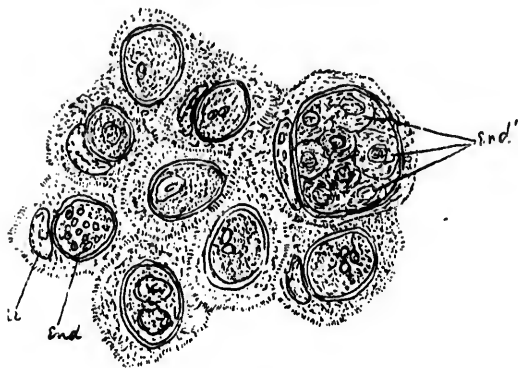
after Darier's method, slightly modified, the disease of the unremoved breast, and found there, as in the first case, the bodies in question. Figures 1 and 2 are drawn from preparations so made from Dr. Primrose's case.



(Fig. 1.)

#### EXPLANATION OF FIGURES.

Fig. 1.—*a, b, c, d, e*, examples of isolated epithelial cells with endocytes; *n*, the pushed-aside nucleus of the epithelial cell; in *b*, the endocyte has two nuclei; *end*, the endocyte, *sh*, its refracting membrane; in *f*, the endocyte has undergone a process of degeneration and disintegration.  $\times 500$ .



(Fig. 2.)

Fig. 2.—A group of epidermal cells with endocytcs, *end*, *n*, the nucleus. In one cell there are several endocytcs (*end'*) present within the same membrane.  $\times 500$ .

As these structures and analogous intracellular forms in epitheliomata are likely to be the subject of a great deal of interest in the near future; and moreover, as the views of Darier and Wickham, as to their nature, may not be endorsed by all pathologists, it is convenient to have a name for them which will express no preference for any particular theory. I have, therefore, selected the term *endocyte*,\* which is both readily applicable and intelligible, and it will, I hope, serve the purpose until the question

---

\**Endon* within, and *kutos* a vesicle or cell.

of the nature of these bodies is satisfactorily solved.

Darier's method was either to mount the crusts on the slide in water under a cover glass, and study them with a moderately high-power objective, or, better, to tease out a crust on the slide in Gram's iodine solution, and examine as before. When more or less fat is present, it is removed by placing the crust for several hours in a 10% solution of ammonia. The method which I adopted was somewhat different, and had the advantage, also, of making a permanent preparation. The crust, or a portion scraped from the nipple, was teased out in a drop of tincture of iodine on the slide, the cover glass put on, and after a couple of minutes a drop of 50% glycerine run in. The alcohol and the iodine fix the endocytes, and the iodine gives them a brown, yellow tint, which fades slowly in glycerine. In the preparation from Dr. Primrose's patient, there were not a large number of free cells, with endocytes enclosed, although forms like those of Fig. 1 were met with; but the most unmistakable evidence of the occurrence of the endocytes was furnished by some of the unteased portions themselves (Fig. 2). Here they were readily seen with their clear, hyaline membrane, in a great majority of the cells, whose nuclei frequently appeared pushed to one side and crescentic in outline.

In an examination of the sections made from the excised breast of the same case, there were found a large number of endocytes in the epithelial cells, covering the retracted nipple, as well as in those filling the ducts.

As already stated, endocytes are present in epitheliomata, but less abundantly; and they have rarely the cystic membrane, and the large size found in those of Paget's disease, and they occur, moreover in the central cell of the "nest," which fact readily distinguishes them from those now under consideration.

I leave the question of the nature of the endocytes for discussion in a future paper.\* Although not endorsing fully the views of Darier and Wickham with regard to them, I have no doubt whatever of their great value in the diagnosis of Paget's disease, whether of the nipple or of any part of the skin.

---

\*To appear as one of the memoirs of the Pathological Society of Toronto.

