DIAGNOSIS OF TRICHOMONAD INFESTATION BY EXAMINATION OF STAINED FILMS*

BY

L. W. HARRISON

London

For many years now I have been convinced that the examination of stained films of discharge is a more practical and certain method of diagnosing trichomonad infestation than is the examination of material in the fresh state, whether by dark-ground or by simple axial illumination. In this I have been in agreement with Liston and Lees (1940):

"The great advantage is that films can be made in the clinic without disturbing the ordinary routine and can be examined at leisure."

Another advantage is that one is not dependent on a single feature, the waving of flagella—the animal may not be in a waving mood that day—but on at least three features which can be demonstrated by the use of a simple stain requiring no particular skill. On this point I would urge that, whatever the suspicion, every film of suspected urethral, vaginal, or cervical discharge should be stained, not only by Gram's method but by a single stain so that its cytology besides its bacteriology can be studied.

There are many methods of staining *Trichomonas vaginalis* and the more elaborate ones show up the

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FIGURE.—Photomicrograph ($\times 1,175$) of vaginal discharge containing *Trichomonas vaginalis*. For description see text. Photograph by Mr. E. V. Willmott, Department of Scientific Photography, Royal College of Surgeons of England,

morphology, with axostile, undulant membrane, flagella, etc. beautifully, but for diagnosis it is not necessary to see *all* these features. All that is necessary for a diagnosis is illustrated in the photomicrograph accompanying this note, especially in the triangular specimen marked 1 but also in 2 and 3 and partly in the specimen on the right of the illustration, though both 2 and 3 are slightly out of focus. The diagnostic features are: definite outline, which may be of any shape, thanks to the distortion of the parasite in preparation of the film, the granular cytoplasm, and in 1 and 2 the oval, or pear-shaped, nucleus stained rather less intensely than the nuclei of the other cells. The specimen shows a further feature, not necessary for diagnosis but useful here to convince the sceptical reader that these are really trichomonads, namely the axostile.

The film of which the illustration is a photomicrograph was kindly supplied by Dr. W. V. Macfarlane and was stained by me, after simple heat-fixation, by covering it with Loeffler's alkaline methylene blue

which had become polychrome with age. The stain was washed off after 45 minutes, mopped, and allowed to dry. I think the advantage of Loeffler's blue over Leishman or Giemsa stain for this purpose is that it is simpler; I do not think one can over-stain with it as I have often seen the features described above after leaving the stain on for an hour or more. One precaution may be necessary if one is using such a sub-stage illuminant as that made by Zeiss; that is to use the blue glass filter, otherwise the granularity of the cytoplasm may not be apparent.

I believe that if workers in male clinics would take the trouble to practise on films made from well-accredited specimens of *T. vaginalis*—and really very little practice is necessary—they would find more trichomonad infestation in males than they seem to be finding at present.

REFERENCE

Liston, W. Glen, and Lees, R. (1940). *Brit. J. vener. Dis.*, 16, 34.