ascending genital tract infection and its permanent sequelae. If the partners were pregnant, there would also be risk of neonatal infection.

This small study has caused concern as (a) it reinforces the problem of the asymptomatic shedder of *Chlamydia trachomatis* in the male population (about 15% in this series), and (b) if these data are reproducible, on the first attendance as many as 16% of male patients may have this common and potentially serious sexually transmitted disease, which is missed by conventional diagnostic methods. The above results suggest that 30% of infected men would be missed in departments that use >10 PML/field,² although the two glass urine test may identify some of these cases.

The journal has, over the years, paid much attention to the diagnosis of non-specific urethritis in men. We wonder whether looking at isolation positive cases and referring back to microscopy may be of interest to our colleagues, and in particular ask whether colleagues with full chlamydial diagnostic services have made similar observations. Should the results of this study be supported by other centres, full diagnostic facilities should be made available urgently to all genitourinary departments as a matter of public health necessity. Failure to achieve early diagnosis in men means failure to prevent female tubal occlusive infertility, ectopic pregnancy, chronic pelvic pain, and avoidable neonatal disease.

Yours faithfully,

G Sharmacharja

Doncaster Royal Infirmary,
Armthorpe Road, Doncaster DN2 5LT

References

1. Adler MW. Diagnostic, treatment, and reporting criteria for non-specific genital infection in sexually transmitted disease clinics in England and Wales. 1: Diagnosis. *British Journal of Venereal Diseases* 1978;54:422-7.
2. World Health Organisation. Non-gonococcal urethritis and other selective sexually transmitted disease of public health importance. Non-gonococcal urethritis — definition and diagnosis 11-1. *WHO Tech Rep Ser* 1981:59.

TO THE EDITOR, *Genitourinary Medicine*

Indigenous intravaginal pentatrichomonads vitiate the usefulness of squirrel monkeys (*Saimiri sciureus*) as models for trichomoniasis in men

Sir,
After Street, Taylor-Robinson, and Hetherington proposed the squirrel monkey

as a model for the study of human trichomoniasis,¹ we obtained two young adult female squirrel monkeys from a commercial supplier. Unfortunately they were already infected with intravaginal trichomonads. Protozoa were regularly obtained by syringing the vaginas with a small amount of serum saline, and identified by dark field illumination. Isolates were readily grown in our modification of Diamond's medium.²

Study of the trichomonads in cooled wet preparations and in fixed silver stained smears showed five anterior flagella distributed in the "4 + 1" arrangement characteristic of the genus *Pentatrichomonas*, as described by Honigberg.³ Other workers including Wenrich have found similar trichomonads in the vaginas and intestines of Rhesus monkeys.⁴

Because *Trichomonas* and *Pentatrichomonas* species are not easily distinguished, monkeys for trichomoniasis research need to be exhaustively examined for the presence of indigenous organisms. Naturally occurring infections can be eradicated by metronidazole, but as the immunological state could be altered by a new infection with trichomonas, we suggest that the squirrel monkey is not the ideal model for human trichomoniasis.

Yours faithfully,

David H Hollander*

Janet D Gonder†

*Department of Microbiology, and

†Animal Resources Center,
East Carolina University School of Medicine,
Greenville, North Carolina 27834, USA

References

1. Street DA, Taylor-Robinson D, Hetherington M. Infection of female squirrel monkeys (*Saimiri sciureus*) with *Trichomonas vaginalis* as a model of trichomoniasis in women. *British Journal of Venereal Diseases* 1983;59:249-54.
2. Hollander DH. Colonial morphology of *Trichomonas vaginalis* in agar. *J Parasitol* 1976;62:826-8.
3. Honigberg BM. Evolutionary and systematic relationships in the flagellate order Trichomonadida Kirby. *J Protozool* 1963;10:20-63.
4. Wenrich DH. Morphology of the intestinal trichomonad flagellates in man and of similar forms in monkeys, cats, dogs, and rats. *J Morphol* 1944;74:189-211.

**Drs Taylor-Robinson, Street, and Hetherington reply below.—
ED, *Genitourin Med*.

TO THE EDITOR, *Genitourinary Medicine*

Sir,

The comments by Hollander and Gonder serve as a useful reminder that monkeys may be infested naturally in the vagina with trichomonads. However, the marmosets, tamarins, and squirrel monkeys that we used were not. As we pointed out previously,¹ three attempts to recover trichomonads from each of six squirrel monkeys before they were inoculated with *Trichomonas vaginalis* failed. Furthermore, trichomonads were not recovered from two of these monkeys after inoculation, despite 23 and 32 attempts respectively, or at any time from two squirrel monkeys that served as controls. The squirrel monkey may not be the ideal model for human trichomoniasis but it was the only one with which we had success. Obviously, an indigenous vaginal trichomonal infestation will vitiate the usefulness of any monkey in experiments of this kind. To be charitable, we shall assume that Hollander and Gonder were not implying on the basis of observations on two monkeys that such infestation was always likely to occur, for they were aware, of course, that it was not our experience. Finally, our observations indicated that immunity, at least to *T vaginalis*, developed only weakly so that, without testing the point, it may be premature to suggest that a squirrel monkey treated with metronidazole will not serve as an ideal model or, at least, a useful one.

Yours faithfully,

D Taylor-Robinson*

D A Street*

C M Hetherington†

*Clinical Research Centre,

Harrow, Middlesex

†National Institute for Medical Research,
Mill Hill, London

References

1. Street DA, Taylor-Robinson D, Hetherington CM. Infection of female squirrel monkeys (*Saimiri sciureus*) with *Trichomonas vaginalis* as a model of trichomoniasis in women. *British Journal of Venereal Diseases* 1983;59:249-54.

TO THE EDITOR, *Genitourinary Medicine*

Tyson or not Tyson

Sir,
We report a case of gonococcal "tysonitis" in a man aged 35 who presented in March

Correspondence

1983 with urethral discharge and two painful swellings on either side of the frenum. *Neisseria gonorrhoeae* was isolated from the pus and led to the diagnosis of gonococcal "tysonitis". A 15 day course of ampicillin was given, and the "tysonitis" disappeared after one week.

Gonococcal "tysonitis" is a classic complication of gonorrhoea and is mentioned in almost all dermatology textbooks.¹ Fiumara, however, found only two cases of documented "tysonitis" in 60 000 patients who visited a venereal disease clinic.² Another report was made in 1976 by Bavidge, but without detailed data.³

We wish to clarify the definition of "tysonitis" that has led to certain confusion. (1) The term "tysonitis" is new as it is not mentioned by nineteenth century French authors in their venerology textbooks.⁴ They only described lateral abscesses of the frenum without implicating a glandular origin. (2) The "glandulae odoriferae" of the glans corona described by Edward Tyson in the seventeenth

century⁵ are in fact what we call today pearly papules of the penis, which are not glandular but angiofibromas. (3) The glands of Tyson are often said to be ectopic sebaceous glands of the glans, sulcus corona, or penile shaft. Hyman and Brownstein showed evidence of ectopic sebaceous glands on the glans penis.⁶ We searched for such glands in the sulcus corona of 10 fresh male corpses, in none of which did the necropsy show any sebaceous gland.

We have therefore come to the conclusion that what we call tysonitis is not tysonitis, and that the glands of Tyson are not glands of Tyson. We recommend that both the terms "glands of Tyson" and "tysonitis" should be dropped, and the term "gonococcal abscesses" used instead without referring to the glandular site of such lesions.

Yours faithfully,

M Janier
B Cavalier
J Civatte

Clinique des maladies cutanées et syphilitiques,
Pavillon Gougerot,
Hôpital Saint-Louis,
2, Place du Dr Alfred Fournier,
75475 Paris Cedex 10,
France

References

1. Rook A, Wilkinson DS, Ebling FJG. *Textbook of dermatology*. London: Blackwell Scientific Publications, 1979.
2. Fiumara NJ. Gonococcal tysonitis. *British Journal of Venereal Diseases* 1977;53:145.
3. Bavidge KJN. Gonococcal infection of the penis. *British Journal of Venereal Diseases* 1976;52:66.
4. Rollet J. *Traité des maladies vénériennes*. Paris: Masson, 1865.
5. Cowper W. *Myotomia reformat*. London: Sam Smith and Ben Walford, 1694:228-9.
6. Hyman AB, Brownstein MH. Tyson's "glands". *Arch Dermatol* 1969;99:31-6.

Book reviews

Bacterial vaginosis. Edited by Per-Anders Mårdh and David Taylor-Robinson, 1984. Almquist and Wiskell International, Stockholm. Pp 270. Price \$30.

Three spelling errors encountered in the preface and list of contents did not auger well, but fortunately this was atypical.

Most of this hardback book is a compilation of papers presented at a symposium on bacterial vaginosis held in Stockholm during January 1984. The aim of the symposium was to gather together information on various aspects of anaerobic curved rods and *Gardnerella vaginalis* and to elucidate their role in bacterial vaginosis. By way of orientation, a 53 page introductory section "Physiology, immunology, and bacteriology of the vagina" comprises three chapters on: host defences and the vaginal mucosa, bacteriology of the vagina, and bacteriology of *G vaginalis*. In setting the scene for the subsequent presentations, these chapters

form useful reviews of the current published reports, but more than anything else they impart an appreciation of the human vagina as an extremely complex ecosystem.

The main part of the book comprises 26 papers covering the cellular characteristics, genetics and immunobiology, diagnosis, clinical and epidemiological observations, and pathogenicity of anaerobic curved rods. Inevitably such an onslaught on a recent rediscovery (similar anaerobic curved rods were described by Curtis in 1913 but were virtually ignored until the beginning of this decade) results in much repetition, particularly within the introductions to the individual papers. Nevertheless, these sections contain many details of value to the clinician and microbiologist with a special interest in the subjects. The gain in knowledge relating to the organisms themselves is impressive but, perhaps not surprisingly, this has not been matched by a comparable increase in our understanding

of their importance. The sections on complications and treatment of bacterial vaginosis contain only two papers each.

The final part of the book contains a valuable summary of the symposium in the form of recommendations from eight working groups set up to discuss various aspects of bacterial vaginosis. This is recommended reading for the wide range of clinicians and microbiologists who deal with genital tract infection in women.

The term bacterial vaginosis is recommended because the syndrome of malodorous vaginal discharge is neither "non-specific" nor an "itis". It is defined as "a replacement of the lactobacilli of the vagina by characteristic groups of bacteria accompanied by changed properties of the vaginal fluid". Bacterial vaginosis could also be sub-grouped according to symptoms (for example—malodorous bacterial vaginosis), signs (for example—clue cell positive bacterial vaginosis), or culture (for example—*G vaginalis* associated bacterial