ABBREVIATIONS

This section of the journal is published in collaboration with the two abstracting journals, Abstracts of World Medicine and Ophthalmic Literature, published by the British Medical Association. The abstracts are divided into the following sections:

Syphilis (Clinical, Therapy, Serology, Biological False Positive Phenomenon, Pathology, Experimental).

Gonorrhoea.

Non-Gonococcal Urethritis and Allied Conditions.

Reiter's Disease and Allied Conditions.

Antibiotics and Chemotherapy.

Public Health and Social Aspects.

Miscellaneous.

After each subsection of abstracts follows a list of articles that have been noted but not abstracted.

SYPHILIS (Clinical)

Prognosis of General Paresis after Treatment.


The authors of this paper from the National Institute of Neurological Diseases and Blindness, Bethesda, Maryland, have received the records of 100 patients diagnosed as having generalized paresis who were on the active rolls of St. Elizabeth's Hospital, Washington, DC, in January, 1966, and had been treated at least 10 years previously. All had originally been admitted to the hospital because of general paresis in an advanced state, and the diagnosis in all cases had been confirmed by spinal fluid examination. Of these 100 patients, thirty had been treated with penicillin alone and 34 with both malaria and penicillin. The remaining 36 had not been treated with penicillin, but 31 of them had received malaria treatment. Many of the patients who had received penicillin or malaria therapy had also received bismuth and arsenic, but these were not analysed separately. Two patients treated initially with malaria had subsequently been given penicillin, but less than 10 years before the date of the study; they were therefore placed in the 'malaria or other [non-penicillin] treatment' group.

Those patients who had received penicillin alone tended to be younger than those who had never received penicillin, and for this and other reasons the three treatment groups were not directly comparable. In assessing the progression of the disease, all new neurological signs gross enough to be documented and which did not have an obvious cause such as trauma or tumour were taken into account, but no attempt was made to evaluate the progression of mental or neurological signs present before therapy. The average follow-up period after treatment was 22 years for the whole group and 16 years for the 64 who had received penicillin.

Signs of progression of neurosyphilis had appeared since treatment in 31 patients. There were fourteen cases of grand mal epilepsy; this was the only sign in ten, while in the remaining four epilepsy was preceded or followed by amyotrophy of the hand, hemiparesis, or cerebral haemorrhage. In the remaining seventeen cases, the neurological complications included paraplegia, hemiparesis, amyotrophy, tabes dorsalis, optic atrophy, and oculomotor palsy. In the group in which new signs had occurred the average age was about 53 years and the average interval between therapy and the first new sign was 12 years. In the group in which new signs did not occur the average age was nearly 63 years and the average period of follow-up almost 22 years at the time of study.

New signs had appeared in six (20 per cent.) of the patients in the 'penicillin alone' group and in six (17 per cent.) of those in the 'malaria or other' group. In the 'penicillin and malaria' group, however, nineteen (56 per cent.) had developed new signs, a finding partly explicable on the assumption that patients with more severe and progressive disease were more likely to have received double treatment. There seemed to be no correlation between the dose of penicillin and the development of new symptoms.

Recent spinal fluid examinations had been carried out on 97 of the 100 patients. The Kolmer test on the spinal fluid was positive in 23 patients, seven of whom had developed new signs; the protein was increased in twelve patients, six of whom had developed new signs; and a minimal lymphocytosis was present in four patients none of whom had developed new signs. Thus progression of the disease was common in the absence of cerebrospinal fluid changes, while on the other hand a reactive cerebrospinal fluid did not always indicate any progression.

The authors point out that the incidence of new neurological signs in these patients—31 per cent. in the whole group and 39 per cent. in those treated with penicillin—was far higher than would be expected in a nonsyphilitic population of the same age range and must
be regarded as evidence either of progression of the neurosyphilitic process in spite of treatment or of increased susceptibility to other neurological diseases, such as cerebrovascular disease. Possible explanations are discussed.

J. S. Cohen

Luminescent Study of the Pupils and Pupillary Reactions in Early Forms of Syphilis [in Russian].


Using Wood's rays in a dark room 10 minutes after adaptation of the eyes to darkness, the size, shape, and reaction to light of the pupils were studied in 120 patients (20 men and 100 women) suffering from syphilis, i.e. seventeen from primary (six sero-negative), ninety from secondary, eleven from latent, and two from late congenital syphilis. By this method white luminescence of the crystalline lens contrasted strongly with the dark shades of the surrounding iris, showing clearly any pupillary abnormality, frequently not detectable on routine clinical examination. Whereas routine examination revealed pupillary irregularity in 23, anisocoria in forty, and diminished reaction to light in nineteen patients, under Wood's rays these abnormalities became evident in 68, 75, and 25 patients, including two with sero-negative primary syphilis. Delayed adaptation to darkness was noted in thirteen patients. In a control group of 32 patients suffering from gonorrhea there was only one woman in whom Wood's rays showed irregularity and inequality of the pupils. When the rays were applied to the skin, leucoderma syphilitica was observed in eight patients compared with only three in whom it was apparent on inspection in daylight or in strong electric light.

The authors postulate that abnormalities in size and shape of the pupils and of their reaction to light in early syphilis depend on an early involvement of some structures of both divisions of the autonomic nervous system as well as an involvement of the ingoing and outgoing parts of the pupillary reflex arc. Considering this, they conclude that, in cases where such abnormalities have been detected, the dosage of antibiotics and other antisyphilitic drugs ought to be increased. [This report comes from the Departments of Physiotherapy and Syphilology of the Central Institute for the Study of Skin and Venereal Diseases, Moscow.]

L. Z. Oller


A case of secondary syphilis with pulmonary nodules is reported from the Divisions of Dermatology, State University of New York, and King's County Hospital Center, Brooklyn.

The patient presented with a widespread eruption of infiltrated nodules and plaques, alopecia, and a generalized lymphadenopathy. Nodular infiltrates were seen in both lower lobes on radiological examination of the chest. Biopsy of the skin lesions showed non-caseating granulomata. The VDRL test was reactive 1:1024, the γ-globulin markedly raised with an inverse albumin-globulin ratio, and the indirect Coombs test was positive.

There was good response to a course of procaine penicillin (a total of 7-8 mega units), and 4 months later all lesions, including the pulmonary nodules, had cleared up completely. The VDRL test had dropped to 1:64, and the RCF and FTA tests were positive.

The authors could find only two other reports in the literature of pulmonary changes in secondary syphilis. They saw no pulmonary lesions on radiological examination of the chest in six other patients with secondary syphilis; they also quote a study of 1,500 patients who showed no pulmonary changes on screening before antisypilithic therapy.

The skin and lung lesions in the case reported suggested a diagnosis of sarcoidosis, but the true aetiology was established on a reactive VDRL test in high titre. Short courses of antibiotics—this patient had received 3 months previously tetracycline 1 g. daily for 3 days—in the early phase of syphilis may well be responsible for atypical clinical findings. However, the serological tests are not altered and are, therefore, the basis of diagnosis in such cases.

C. S. Ratnatunga


It has been suggested that unilateral retinitis pigmentosa might be syphilitic in nature. Two cases are presented here and the Treponema pallidum immobilisation test was negative in both instances.

P. J. H. Sellors


ABSTRACTS


SYPHILIS (Therapy)


SYPHILIS (Serology)


In studies at the National Institute of Public Health, Utrecht, Nichols strain Treponema pallidum were extracted from the testes of infected rabbits, purified by differential centrifugation, and disrupted ultrasonically. A polysaccharide (TPo) was extracted from the lysed organisms by digestion with trypsin followed by precipitation with ethanol; ultracentrifugation studies showed it to be homogeneous.

In complement-fixation tests TPo was found to react with the sera of rabbits infected with Nichols strain T. pallidum, but not with twenty sera from human patients with syphilis. Identical titres against TPo were found before and after absorption of the rabbit syphilitic sera with cardiolipin, indicating the absence of this from TPo. Absorption of the rabbit sera with Reiter protein antigen produced some fall in titre against TPo, suggesting the presence in it of a second component related to the polysaccharide antigen of the Reiter treponeme in addition to the strain-specific polysaccharide of the Nichols treponeme. Reactivity of TPo could not be demonstrated in gel diffusion tests against rabbit or human syphilitic sera or rabbit antisera against the Reiter treponeme or Reiter protein antigen.

A. E. Wilkinson


Sera from nineteen patients with primary and 22 with secondary syphilis were studied at the Communicable Disease Center, Atlanta, Georgia: the sera were chosen because of their high titres of reagin antibody. In immunofluorescence (IFA) tests with Treponema pallidum as antigen and in which antoglobulin conjugates specific for IgG, IgM, and IgA were used, IgG antibody was found to be the most reactive, although the others were detectable at lower titres. IgG was the only immunoglobulin detectable at serum dilutions above 1 in 160; thus, in the FTA-200 test, IgG alone would be detected.

Sera were fractionated into 19S, 7S, and 3-5S components on Sephadex G-200 columns and the fractions tested in the IFA procedure with the three specific conjugates. With syphilitic sera, the 7S peak in the elution curve was noted to be as high or higher than the 3-5S peak; the reverse is usually found with normal sera. The main IgG reactivity was present in the 7S peak with lesser degrees in the 19S and 3-5S peaks and in the intervening troughs. IgM activity was confined to the 19S peak and the following trough. Although the bulk of the IgA globulin was present under the 7S peak, with lesser amounts in the 19S peak and intervening trough, IgA antibody reactive in the IFA test was detected in the 19S peak and the following trough but not under the 7S peak. Possible explanations for this are discussed. When the sorbent used in the FTA-ABS test to neutralize the effect of group antitreponemal antibody was used to dilute sera in place of the buffered saline used for the preceding experiments, it was found that the titres of IgG and IgM antibodies were decreased while that of IgA was abolished.

Tests for the reactivity of the fractionated sera in other serological tests showed that in the TPI test, the greater part of the reactivity was present under the 7S (IgG) peak. This was also true of the Kolmer Reiter protein complement-fixation test, although only six sera from patients with primary syphilis were studied. Fractions from the 19S peak and the trough between the 7S and 3-5S peaks were anticomplementary. In the VDRL slide test, reactivity was found in the 7S sera in 28 of 31 sera and in the 19S region in five of fourteen primary and ten of seventeen secondary syphilitic sera. [Other
workers have reported finding 19S antibodies alone in sera from some patients with primary syphilis; this may perhaps be affected by the duration of the disease when the specimen is taken.]

A. E. Wilkinson

[Reprinted from Abstracts on Hygiene, by permission of the Editor]


SYPHILIS (Pathology)


The authors, from the University of Iowa, examined 55 specimens of aqueous humour taken from 47 patients at the time of cataract surgery. Within 10 minutes examination was made for motile treponemes and specimens were also stained with fluorescent antibody using an indirect technique. FTA-ABS tests were done on the aqueous humour and serum. Motile treponemal-like forms were seen in large numbers in specimens from both eyes of one patient aspirated at an interval of 10 days. [The type of motility is not stated.] They were thought to be nonsyphilitic because they did not fluoresce and to be possibly of oral origin. The patient’s serum and aqueous fluid were negative in the FTA-ABS test. No evidence of infection was found after intraocular inoculation of rabbits observed for 5 months. One patient had positive FTA-ABS reactions in serum and aqueous, but no treponemal forms were seen; another had a positive FTA-ABS test in the serum only, and rod-like fluorescent forms in the aqueous which were considered to be of no significance.

It is thought that these cases furnish a control group which tends to substantiate the validity of previous investigations in this field.

F. Rodin


Twelve out of 36 patients with chronic uveitis, chorioretinitis, interstitial keratitis, dislocated lenses, optic atrophy, and neurosyphilis were found to have treponemes in the aqueous humour, using the fluorescent antibody darkfield method. Seven of the twelve patients were treated with ampicillin and probenecid, and in five of six patients with active uveitis there was some improvement of the uveitis as the treponemes disappeared from the aqueous humour. However, two of the five patients subsequently developed a recurrent uveitis with the reappearance of intraocular treponemes. In one patient the uveitis persisted and the intraocular treponemes remained despite therapy. The FTA-ABS test was non-reactive in seven of the eleven patients whose serum was examined.

E. S. Perkins


GONORRHOEA


Because of the increase in strains of gonococci relatively resistant to penicillin and the fact that some people have become sensitized to penicillin the authors of this paper from the National Communicable Disease Center, Public Health Service, Atlanta, are concerned with alternative methods of treatment for gonorrhoea. They favour oral medication because it avoids painful injections and lessens the risk of anaphylactic reactions. Doxycycline monohydrate is a tetracycline derivative which is said to produce blood levels equal to or higher than those of other tetracyclines although it is given in smaller doses.

The authors have used it to treat 169 male patients suffering from uncomplicated gonorrhoea, confirming the diagnosis by Gram staining of smears and by culture on Thayer-Martin selective medium.

Each patient received 250 mg. of the drug in the form of five 50-mg. capsules taken in one dose. The patients
were asked to return after 96 hrs, and 158 did so. On their return urethral scrapings were taken for culture; the gonococcus was grown in six cases, which were regarded as treatment failures—a failure rate of 3-8 per cent. The remaining eleven patients returned 1 to 2 weeks after treatment; two gave positive cultures, probably because of re-infection. Including these cases as failures, the authors still claim a 95-3 per cent. success rate. Side-effects (gastrointestinal) occurred in only one case.

[The success rate is high but the standards of observation and testing after treatment seem cursory compared with usual practice in Great Britain.]  
A. J. King


100 women attending the Black Street Clinic, Glasgow, and found to be suffering from gonococcal cervicitis and/or urethritis were treated with 2 g. kanamycin sulphate intramuscularly. Of the nine found to be infected during the 4-week follow-up period, five were thought to be treatment failures. Thus the minimum failure rate was calculated as 5 per cent. However, as eleven were not examined at all after treatment, and another 32 did not complete the full follow-up schedule, the failure rate could have been almost double this figure.

The paper also provides a comparison between three diagnostic methods: Gram-stained smear, culture, and the delayed fluorescent antibody technique (DFT). 85 of these patients were diagnosed on Gram-stained smears, 72 on culture, and 39 by the DFT. [This is a much lower percentage of positives than is usually found by the DFT.]

M. J. Hare


The gonococcus has become less susceptible to penicillin and other antibiotics in most parts of the world. The sensitivity to antibiotics of 108 strains of gonococci isolated in 1961 and in 1967–68 from the South-East Asia and Western Pacific regions was determined at the Neisseria Department, Statens Seruminstitut, Copenhagen.

In 1961, 65 strains received from Ceylon and the Philippines were tested against penicillin, streptomycin, and tetracycline; 44 of these strains had been preserved and these were tested in 1968 against sulphathiazole, chloramphenicol, erythromycin, nalidixic acid, kanamycin, cephaloridine, and cephalothin. In 1967–68, 43 strains of gonococci were received from Thailand, Hong Kong, Taiwan, and Vietnam; these were also tested against all the above-named agents.

All but one of the 87 strains were fully or moderately sensitive to sulphathiazole, chloramphenicol, erythromycin, nalidixic acid, and kanamycin. Only twenty strains (23 per cent.) were sensitive to penicillin; these were also sensitive to streptomycin and tetracycline. Sixteen of them were isolated in 1961 and four in 1967.

Strains less sensitive to penicillin had increased from 64 per cent. in 1961 to 90 per cent. in 1967–68. Strains resistant to streptomycin and less sensitive to tetracycline and spiramycin had also increased during this period. While all the strains from 1961 were sensitive to chloramphenicol and erythromycin, one-quarter were only moderately sensitive to the former and three-quarters to the latter in 1967–68.

Although this decreased susceptibility of the gonococcus to antibiotics is common to most parts of the world, an increasing susceptibility has been noted in Northern Europe. The reason for this reversion is not clear, but it could be related to the adequate doses of antibiotics used in these areas.

C. S. Ratnasinghe


In experiments at the State Bacteriological Laboratory, Stockholm, the survival of eighteen commonly encountered pathogens in three transport media was studied. These were: Ringertz’ modification of Stuart’s medium, Stuart’s medium (SBL) containing less thioglycollic acid and added cysteine, and VMG medium which contained some added nutrient material and a bacteriostatic. These were dispensed in sealed ampoules under an atmosphere of nitrogen. The organisms tested were grown for 20 hours on appropriate media, washed off with buffered saline, and adjusted to a density of 7–10 × 10⁸/ml.

0·1 ml aliquots were allowed to soak into charcoal-treated swabs which were placed in the transport media and left at room temperature in the dark for periods of up to 120 hours. After storage, the swabs were shaken in 5 ml buffered saline and colony counts performed. The count after one hour’s storage was taken as the reference level.

Of the strains tested, gonococci, meningococci, and H. pertussis were the most labile, showing a considerable fall in the colony counts after 72 hours’ storage in all three transport media. The other pathogens tested, which included strains of pyogenic cocci, Cl. perfringens, C. diptheriae, E. coli, Salmonella, Shigella, Proteus, Pseudomonas, and Vibrio cholerae, showed substantially unchanged colony counts after 120 hours’ storage in Stuart’s and SBL media; most strains showed increased counts in the VMG medium. [This might not always be an advantage when VMG medium is used to transport a mixed bacterial flora as sensitive pathogens might be overgrown.]  
A. E. Wilkinson

This paper reviews the methods used for the cultural diagnosis of gonorrhoea at the State Bacteriological Laboratory, Stockholm. The medium used was haematin agar with horse serum; 25 units polymyxin and 10 μg ristocetin/ml were added to make it selective. Specimens were taken on cotton-tipped swabs treated with buffer and impregnated with charcoal; the swabs were put up in plastic envelopes and sterilized by gamma radiation. Stuart's transport medium (Ringertz' modification, *Acta path. microbiol. scand.*, 1960, 48, 105) was dispensed in sealed ampoules under an atmosphere of nitrogen. After inoculation, plates were incubated in sealed containers in a humid atmosphere with added CO₂. Later, a special incubator was used in which humidity and CO₂ levels could be accurately controlled.

Tests with the ampouled transport medium showed that it gave as good or better results as freshly-prepared medium, even after storage at room temperature for 42 months. Wooden sticks for the swabs gave very much better results than plastic ones.

A comparison of the selective medium with the same medium without antibiotics showed that, out of 49,379 specimens, gonococci were grown from 9,567 (10.1 per cent.) 6,641 strains grew on both media, 2,108 on the selective medium alone, and only 818 on the antibiotic-free medium. The selective medium inhibited the growth of almost all contaminants except some strains of Proteus. About 9 per cent. of the strains of gonococci isolated were sensitive to the concentration of ristocetin used and would not have been detected if cultures had been plated on the selective medium only. Under the controlled conditions of the CO₂ incubator, the colony diameters of ten newly-isolated strains after 20 hours' incubation were noted to be almost twice the size of the same strains incubated in parallel in a sealed container.

A. E. Wilkinson


**NON-GONOCOCCAL URETHRITIS AND ALLIED CONDITIONS**


There is little documented evidence about the factors leading to cutaneous candidiasis of the groin. The authors of this paper from Martin Army Hospital, Fort Benning, Georgia, have studied 89 young white soldiers (mean age 24-4 years) who developed candidiasis of the groin while on active service. One hundred soldiers (mean age 22-1 years) with other diseases of the groin, mainly tinea cruris, were studied as controls.

Groin swabs were taken from both groups and cultures were examined for the presence of Candida albicans. This was found in cultures from 94 per cent. of those with clinical candidiasis. 3 per cent. of those with tinea cruris and 19 per cent. of those with other, more inflammatory, groin lesions yielded Candida, but only a few colonies were isolated from these patients compared with the large numbers obtained from the patients with clinical candidiasis.

Rectal swabs taken from fifty of the patients with candidiasis and fifty controls yielded C. albicans in

From the UCLA School of Medicine, Los Angeles. After a comprehensive review of previous studies, the authors report their work on bacteriological and histological changes in the endometrium after the insertion of an intrauterine contraceptive device (IUD). Lippes loops were inserted into the uterus in women awaiting vaginal hysterectomy for prolapse; hysterectomy was performed between 4 hours and 7 months later. Material for culture was taken from the cervix and from the endometrium through a fundal incision. Results were valid in 61 cases and bacteria were grown from the cervix in 59 and from the fundus in ten of these. In six of the cases with infected fundi, the IUD had been in position less than 48 hours. Histological examination showed infiltration of plasma cells or mononuclear cells in the majority of cases. In one case gonococci were isolated from both the cervix and the endometrium and microscopical examination of the endometrium showed extensive ulceration. The authors conclude that the presence of the IUD in itself does not lead to a higher incidence of pelvic inflammatory disease.

[No clinical details are given for any of these patients.]

M. J. Hare


Mycoplasmas were isolated from 22 and 12 per cent. of newborn infants with birth weights less or greater than 2.5 kg. respectively. Most isolates were identified as "T strains", and the rest as *Mycoplasma hominis*. Two major sites of colonization were the pharynx and the external genitalia in females. Infants positive during the first week of life remained positive, some throughout a 10-month follow-up period, but follow-up cultures in seven of 52 initially negative infants yielded mycoplasmas. Isolation of mycoplasma was associated with low birth weight: mycoplasma-positive infants had a mean weight of 2,605 g. and mycoplasma-negative infants a mean weight of 2,952 g. (P less than 0.01). Isolation of mycoplasma was also associated with prolonged rupture of fetal membranes in low-birthweight infants and with maternal fever, but not with race, maternal age, or parity, or complications of earlier pregnancies, including abortions. Colonization of neonates with mycoplasmas apparently occurs during the birth process. No evidence of neonatal disease due to these agents was noted.

[Authors' summary]


Of 35 young adult males with acute anterior uveitis 20 (57 per cent.) were found to have evidence of chronic
prostatitis as judged by pus cell counts of over 5 million/ml. in total semen ejaculates. In a control group of 25 patients none was found to have prostatitis as judged by this criterion. N. S. C. Rice


REITER'S DISEASE AND ALLIED CONDITIONS


The case of a 64-year-old man with Reiter's disease is described; 3 days after admission to the Billings Hospital of the University of Chicago he complained of severe pain and tenderness in the left knee. The knee had appeared normal the previous day. Examination now showed a tense massive effusion in the knee with pitting oedema of the lower part of the leg, the calf being 7 cm. greater in circumference. Homans' sign was negative. An arthrogram showed extravasation of the dye into the calf.

The differential diagnosis of joint rupture includes dissection of a Baker's cyst and thrombophlebitis. Although rupture of a joint had never been previously reported, there were reports of "thrombophlebitis" as a complication of Reiter's disease. It is suggested that since neither arthromgrams nor venograms were performed in these latter cases some or all of these patients may have had undetected rupture of the knee joint. P. Rodin


**ANTIBIOTICS AND CHEMOTHERAPY**


An appraisal is made of toxic, microbiogenic, and allergic side-reactions occurring in man as a result of the large amounts of penicillin increasingly used in medical and veterinary practice.

The allergic reactions constitute the most common and significant side-effects of penicillin. The major antigenic determinant in penicillin allergy, the penilloy group derived from the penicillanic acid nucleus, is common to all penicillins and explains, at least in part, the cross-reactivity of man to any penicillin derivative or preparation. Available data do not permit conclusions as to the true frequency of allergic reactions to penicillin which are reported to vary from 0.7 to 10 per cent. in different studies in different countries. Among the side-reactions, the anaphylactic type may occur in about 0.015 to 0.004 per cent. with a fatality rate from shock of 0.0015 to 0.002 per cent. among treated patients.

There is no convincing evidence that the frequency of allergic side-reactions to penicillin has increased in the last 10 years in relation to the increasing, worldwide use of penicillin. Persons in contact with penicillin may respond by producing antibodies, the presence of which can be determined by immunological procedures, and these are believed to be partly responsible for the frequency of penicillin side-reactions. Routine prospective skin-testing before penicillin administration cannot, however, be generally advocated at present but, in special instances, it can be undertaken in cooperation with specialists and competent laboratories.

The present investigation includes a study of 151 anaphylactic fatalities reported to have followed penicillin administration. Of these persons, 14 per cent. had evidence of previous allergies of some kind, 70 per cent. had received penicillin previously and one-third of these had already experienced allergic reactions. In most of these fatal cases, the symptoms leading to death, occurred within 15 minutes. An expert committee of the WHO has emphasized that most anaphylactic fatalities can be prevented by measures to reduce penicillin sensitization environmentally in the population on the one hand, and by the preparation of doctors, on the other, that is, with prompt and proper treatment and management of reactions when they occur.

[Authors' summary]


**PUBLIC HEALTH AND SOCIAL ASPECTS**


**MISCELLANEOUS**


Further biological differences between Herpes simplex viruses obtained from the mouth (Type 1) and from genital lesions (Type 2) are described by these authors from Baylor University College of Medicine, Houston, Texas. They had earlier observed that genital strains produced less infectious virus when grown in rabbit kidney cells, but it was now found that the total number of virus particles produced by each type of virus is similar. Thus the particle to infectivity ratio is higher in genital strains. A greater proportion of particles of the oral strains is enveloped but the difference is insufficient to account fully for the higher infectivity. Thermal instability of genital strains may also contribute to their reduced infectivity. The two types are readily distinguished by the ability of genital strains to form plaques in chick embryo culture whereas oral strains form no plaques and replicate only poorly. The neurovirulence of each strain when injected intracranially into
mice is similar if the dose is calculated in terms of total particles, but in terms of plaque-forming units genital strains are more neurovirulent.

D. K. Robinson


Numerous allergic tests and treatment by desensitization were tried in the course of Behçet’s disease.

J. Rougier

