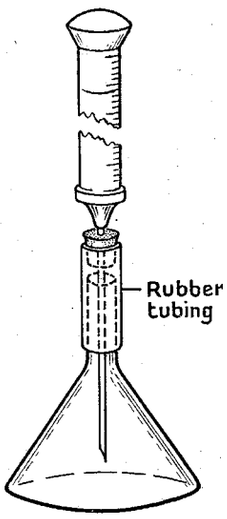
MODIFICATION OF THE HEAF TEST

SIR,—Dr. Peter Stradling has described (July 30) a dropper for use with the Heaf gun in tuberculin testing. I would like to suggest a simple modification of his apparatus which can be made up easily of parts found in any clinic. The parts required are :



The barrel of a 2-ml. syringe.
No. 2 needle.
Length of $^1/_2$-inch rubber tubing.
Small glass funnel from the stem of which 1 inch has been sawn off.
Rubber cap as found on any rubber-capped bottle.

This apparatus can be disconnected for sterilisation and reassembled in a few seconds. All parts can be boiled. When dropping is taking place, the funnel rests on the arm. When not in use the funnel rests in any antiseptic solution, care being taken that the level of the antiseptic does not reach the needle.

To fill the dropper-barrel, the tuberculin solution is drawn into any sterile syringe and is injected into the nozzle of the barrel after first disconnecting the barrel from the needle.

This apparatus was used with great success in a recent survey of 709 patients.

South Ockendon Hospital, Essex. DAVID DAVIS.

IDENTIFICATION OF SYRINGES

SIR,—The battery of syringes used for intravenous drugs in anæsthesia today is, to my mind, a potential source of disastrous error. Most anæsthetists use some method of identification such as different sizes of syringe, labelled racks, or spring-clip labels, but objections can be made to all such methods.

Many of these objections can be overcome by the use of coloured plungers to identify the contents of the syringe. Red for Relaxant, Blue for Barbiturate, and Plain for Pethidine are easy to memorise, and Surgical Equipment Supplies Ltd. are making up syringes for me with a band of colour round the neck of the plunger.

West Suffolk General Hospital, Bury St. Edmunds. H. MARCUS BIRD.

HORMONE TREATMENT OF HÆMORRHAGE

SIR,—I am tempted to write this letter to report a case which may be of unusual interest to both ophthalmologists and physicians, because of the dramatic result.

A woman, aged 74, consulted me in February, 1955. She complained of nausea, vertigo, and visual difficulty. She was unable to see the ground when she walked and always had to be accompanied by someone. In June, 1954, what was said to be a " thrombosis in the left eye " had developed. I am told by Dr. George Frampton that this was probably a hæmorrhage. Dr. Frampton has observed her from time to time, from January, 1955, until now. She had a hæmorrhage about one disc diameter in size in the left macular region and scarring in the region of the right macula. Over a period of six months no change was observed in the condition of the eyes. About a year previously she had had an episode of sudden vaginal hæmorrhage, and about the same time she had had a painful subcutaneous hæmorrhage, the size of a saucer, on the thigh.

Complete neurological investigation had previously been carried out on account of her vertigo, with negative results. The blood picture (including platelets, bleeding-time, and clotting-time) was normal ; Ide test negative.

Physical examination was essentially normal apart from the eyes and a blood-pressure of 200/100 mm. Hg. For this she was given ' Serpasil ' with a resultant fall to 140/80, at which figure it now remains without any medication.

The patient was seen at about monthly intervals, and in June, 1955, she complained that her vision was deteriorating. On July 1, on the assumption that the hæmorrhagic manifestations might respond to hormone therapy,[1] I prescribed ' Proluton ' buccal tablets 10 mg. daily. On July 18 she reported that she thought her vision had improved. She was then instructed to take 10 mg. every second day. On Aug. 4 she was again seen, and by this time her vision had improved remarkably. She was able to see and do things impossible in the past. I could find no sign of the retinal hæmorrhage, and this was confirmed by Dr. Frampton. She has been instructed to continue the proluton 10 mg. every second day. Whereas this patient would always come to see me using a stick and with someone to assist her, she now has gone on holiday alone.

I realise that this one case may have some other explanation and that the patient may yet suffer a relapse, but I feel that in view of the disabling nature of her condition this report is justified.

Johannesburg. ROY MORRIS.

SEXING NUCLEI

SIR,—To the methods mentioned in your excellent leading article of Sept. 24, we should like to add a technique that has, to the best of our knowledge, not yet received attention or been described as such, and that has proved to us of great practical value—namely, the study of vaginal and urethral smears.

During the routine examination of vaginal smears in our department, we noticed that the sex chromatin was strikingly conspicuous in many squamous-cell nuclei, especially, when œstrogen influence, which results in nuclear shrinking and pykenosis, was not too pronounced. A systematic review of smears—some of them years old—from patients with primary amenorrhœa, enabled us to recognise an unexpected majority of males in a series of Turner syndromes, and to reach a positive diagnosis of " ovarian " agenesis in 3 doubtful cases, since they proved to be genetically male. The final result of this study was 12 Turner syndromes, 10 of them genetic males. Since, we have by the same technique also obtained completely unequivocal results in 6 cases of doubtful sex. Our findings and comments will be published in detail presently.[2]

The sex interpretation of the vaginal smears is extremely simple and demands but little experience, while counting and calculating can be omitted altogether. In a complementary study of oral-mucosa smears, taken from male and female volunteers, and of compared oral and vaginal smears simultaneously obtained from gynæcological patients, the uncontestable superiority of the vaginal smear was clearly demonstrated. In the latter, the number of cells, in which the sex chromatin can be recognised, is much higher, even in the presence of some œstrogenic influence ; cumbersome cytoplasmic inclusions are but rarely encountered and the nuclear detail is more clearly visible. Besides, we were pleasantly surprised, when we found out, that the sex chromatin was conspicuous even in the vagina smear drawings and microphotographs of a classical textbook on exfoliative cytology.[3] On the other hand, we have not yet found a cytological description paying much attention to these peculiar chromatin corpuscles.

Urethral smears are also well suited for this kind of study. Although disturbing cytoplasmic inclusions may occur, the nuclei or the urethral-mucosa cells are in most cases clear and vesicular. As will be shown elsewhere, their study can be helpful in cases of male pseudohermaphroditism. Smears from the urogenital sinus in cases of female pseudohermaphroditism and from a very shallow vagina in several instances of vaginal atresia gave equally good results.

Our experience seems to indicate that in biopsies of vaginal mucosa the sex chromatin is as a rule more distinct than in biopsies of the abdominal skin. In the former, the cell nuclei of basal and middle layer appear to be more " eutrophic " and vesicular. We feel that this could be related to the proliferative and desquama-

1. Greene, R., Dalton, K. *Proc. R. Soc. Med.* 1955, **48**, 337.
2. *Ned. Tijdschr. Geneesk.* (in the press).
3. The Cytologic Diagnosis of Cancer. Philadelphia and London; 1950, p. 2.

tive function of the vaginal epithelium. It would in addition explain the superiority of the vaginal over other mucosal smears for the determination of genetic sex as well as for other cytological purposes.

Finally, several fortunate coincidences contribute to the value of the vaginal-smear technique :

(1) Most cases where determining genetic sex is important are seen by the gynæcologist or the obstetrician, who is usually well acquainted with the essentials of technique and interpretation of vaginal cytology.

(2) In cases where the determination of genetic sex is indicated, an adequate vaginal and, eventually, urogenital or urethral smear can easily be obtained.

(3) In these patients, owing to a lack of œstrogen, the desquamating cells are mostly of the basal type, presenting large vesicular nuclei, with very conspicuous sex chromatin. But, in our comparative study, this did not apply to the oral-mucosa smears.

(4) No special technique and no extraordinary skill or experience is wanted, provided the classical fixation and staining method of Papanicolaou has been followed in detail. The very sensitive and elegant Feulgen technique shows the sex chromatin in a somewhat higher proportion of the cell nuclei, but we feel that the Papanicolaou procedure, in addition to being more rapid and more generally used, is anything but inferior in diagnostic value.

We suggest the checking of the sex chromatin as a cytological routine, especially in cases of primary amenorrhœa. Although, for the time being, skin biopsy is still indicated as a valuable control, we believe that in the vast majority of cases, genetic sex can and will be most easily determined simply by the examination of a vaginal smear.

Department of Obstetrics and Gynæcology, State University, Utrecht, Netherlands.

P. J. CARPENTIER
L. A. M. STOLTE
G. P. VISSCHERS.

ASTHMA, CHRONIC BRONCHITIS, AND EMPHYSEMA

SIR,—The excellent article by Dr. Lister (Oct. 8) presents many stimulating ideas and will help in the approach to therapy of many cases. However, it is probable that the problem presents a somewhat different facet in the comparatively uncontaminated air of the West Country from that seen in the overcrowded industrial areas.

The bronchitis death-rates in 1950–53 per 100,000 males in Plymouth were 74 for those of 45–64 years and 332 for 65–74 age-group, which contrasted with 329 and 1235 for the same age-groups in Salford. This fourfold difference reflects more than allergy and gives hope that preventive measures can do much to rid our community of this scourge. Atmospheric pollution is undoubtedly a major factor, but the present Clean Air Bill omits any reference to the most important pollutant —sulphur. It is to be hoped that Members of Parliament for badly affected areas will see that this is rectified when the Bill comes up for second reading.

Conditions at work, especially in cotton mills, mines, and foundries, serve to swell the total of mortality and morbidity. In all these industries rapid improvement in working conditions is possible and imperative.

The contribution of the cigarette to this national problem must be assessed dispassionately. Most of the patients seen in the early stage of chronic cough are addicts to tobacco, but find tremendous relief if they can be persuaded to abstain completely.

Finally, Sir, treatment facilities have been inadequate. Now, in most regions, beds are becoming available in sanatoria and chest hospitals. It is hoped that many of these will be used for prolonged convalescence and rehabilitation of our pathetic army of chronic coughers.

Clean air will ensure healthy lungs even in the presence of some allergy.

Central Middlesex Hospital, London, N.W.10.

HORACE JOULES.

A DEVICE FOR BLIND PHYSIOTHERAPISTS

SIR,—A research grant from the Royal National Institute for the Blind has enabled a device to be designed and developed whereby a blind physiotherapist can detect degrees of erythema in the skin, whether from a test dose or from a general irradiation, by auditory means. This enables him to administer general ultraviolet light with the same degree of accuracy as his sighted colleague. This instrument has now been approved by a panel of the Chartered Society of Physiotherapy, as has a demonstration of the technique of administration in a pilot group of blind physiotherapy students.

Steps are being taken to provide a course of theoretical and practical instruction in the use of the device by such qualified blind physiotherapists as desire it.

A technical description of the apparatus, which is being manufactured for the R.N.I.B. by Electro Medical Supplies Ltd., was published in the September issue of the *Braille Physiotherapy Journal.*

Royal National Institute for the Blind, School of Physiotherapy, London, W.1.

CLIVE SHIELDS
Chief Medical Officer.

HYDROCORTISONE IN PAINFUL SHOULDER

SIR,—Mr. Murnaghan and Mr. McIntosh (Oct. 15) are to be congratulated on their attempt to perform a controlled trial in a field where so much empiricism exists.

I regret, however, that they apparently ignore the fact that although the exact pathology in many cases must remain open to conjecture adequate examination of the "painful shoulder" may enable the clinician to place the underlying lesion into one or another diagnostic subgroup (such as described by Furlong [1] whom they quote) in which management may differ considerably. To be able to appoint any particular case to one of these subgroups, information must be gained concerning not only the range of active movements but also of passive movements and movements against resistance.

From their statement that "as a rule the pain seems to subside of itself within about two years, leaving various degrees of limitation of movement," Mr. Murnaghan and Mr. McIntosh appear to have considered mainly those cases known to many as the "frozen shoulder"—a group in which all methods of treatment have to date been notoriously unsuccessful, the disorder obstinately following its natural history of eighteen months to two years. It is in cases of local damage to the rotator cuff (traumatic, degenerative, or combined) with evidence of early spread of the local inflammatory response to the adjacent capsule of the shoulder joint or the subacromial bursa that treatment often proves so useful. These lesions appear to have a natural history of three to six months unless maltreated, or unless naturally unfortunate for some reason not understood, when they may progress inexorably to the full picture of "frozen shoulder." Active exercises apart from simple gravity-assisted pendulum exercises may accelerate this train of events in the early case, and Mr. Murnaghan and Mr. McIntosh do not record what type of "active exercises" were prescribed in their series. Only observation over a period of three to four weeks will show whether any case with active involvement of the capsule of the joint is in fact progressing to the "frozen shoulder" syndrome.

I would not expect hydrocortisone to have "any specific action in painful shoulder." The only specific action hydrocortisone possesses at the point of local application is the damping down of local inflammatory response, and therefore in nearly all lesions of the rotator cuff and capsule of the shoulder joint it can be used only as an aid to treatment: the usual application of the basic principles of rest and movement suitable to the particular case must not be forgotten.

Had Mr. Murnaghan and Mr. McIntosh given us more exact information about the type of case they were

1. Furlong, R. *Ann. R. Coll Surg. Engl.* 1952, **11**, 300.