ography and to introduce new teaching methods and staffing structures. However, many people are still unaware of the organization and equipment necessary to raise schools to the required standard. Those interested should visit one of the newer schools and read the pamphlet *Standards Recommended by the Society of Radiographers for the Establishment and Organization of Training Schools*.¹

They will then understand why both teacher principal A and superintendent radiographer grade III are posts of high and equal responsibility—and, in addition, both equally underpaid.—I am, etc.,

Plymouth,
Devon

EDWARD A. WALDRON.

REFERENCE

- 1 Society of Radiographers, *Standards Recommended by the Society for the Establishment and Organization of Training Schools*. London, Society of Radiographers, 1965.

Sudden Death in a Young Asthmatic

SIR,—In his condemnation of the use of peak expiratory flow (P.E.F.) as an index of airways obstruction Dr. A. Bouhuys (5 July, p. 53) suggests that significantly different information would be obtained from measurements which reflect maximum flow rates at smaller lung volumes, such as the forced expiratory volume in one second (F.E.V.₁) or the maximum expiratory flow in the middle of the vital capacity (M.M.E.F.). Although it is not difficult to visualize situations where there are gross discrepancies between P.E.F. and maximum flows at smaller lung volumes, numerous studies¹⁻⁹ have shown that for groups of patients P.E.F. correlates surprisingly well with the F.E.V.₁ (correlation coefficients ranging from 0.81-0.94). There have been fewer studies of the relation between P.E.F. and M.M.E.F., but some years ago, in the course of an investigation with Dr. J. Jordanoglou on maximum expiratory flow-volume curves,⁷ we obtained information on this relationship in 14 asthmatic patients with airways obstruction of varying severity.

Our results confirmed what might be predicted on theoretical grounds, that M.M.E.F. was in general a more sensitive indicator of the milder degrees of obstruction than P.E.F. However, when there was established airways obstruction, although the proportionate reduction in M.M.E.F. was greater than in P.E.F., it appeared that the direction of

changes in the obstruction could be obtained from either the M.M.E.F. or P.E.F. (Fig.). These studies obviously need to be extended, but they do indicate that the greater sensitivity of a test should not automatically be equated with a greater power to pick out those patients whose asthma threatens life.

I agree with Dr. Bouhuys in that I would prefer to assess an asthmatic patient by means of a full forced expiratory spirogram rather than by the P.E.F. alone. But until the day comes when spirometers are part of every doctor's equipment I would expect there to be a place for the measurement of P.E.F., since I believe that clinical experience has in general confirmed the modest hopes of the originators of the method that "the lesser usefulness of P.E.F. is to some extent compensated for by the greater simplicity and portability of the instrument used for measuring it."⁸—I am, etc.,

N. B. PRIDE.

Department of Medicine,
Royal Postgraduate Medical School,
London W.12.

REFERENCES

- 1 Higgins, I. T. T., *British Medical Journal*, 1957, 2, 1198.
- 2 Lockhart, W., Smith, D. H., Mair, A., and Wilson, W. A., *British Medical Journal*, 1960, 1, 37.
- 3 Fairbairn, A. S., Fletcher, C. M., Tinker, C. M., and Wood, C. H., *Thorax*, 1962, 17, 168.
- 4 Ritchie, B., *Lancet*, 1962, 2, 271.
- 5 Ritchie, B., *Medical Journal of Australia*, 1963, 2, 259.
- 6 Lal, S., Ferguson, A. D., and Campbell, E. J. M., *British Medical Journal*, 1964, 1, 814.
- 7 Jordanoglou, J., and Pride, N. B., *Thorax*, 1968, 23, 38.
- 8 Wright, B. M., and McKerrrow, C. B., *British Medical Journal*, 1959, 2, 1041.

Asymptomatic Bacteriuria

SIR,—The recent articles by Dr. D. C. L. Savage and others (12 July, p. 75) and Dr. S. R. Meadow and others (p. 81) reporting the results of screening schoolchildren for bacteriuria are of great interest, and I should like to comment on that of Dr. Meadow and his colleagues. As all the urine specimens were examined by microscopy, it is regrettable that pyuria rather than the presence of bacteria was taken as an indication for further investigation. The unreliability of pyuria as a means of identifying girls who have bacteriuria is well recognized,¹ and Dr. Savage and colleagues observed more than 10 pus cells per cu. mm. in only 60% of their bacteriuric girls. The 40% false negative rate incurred by the method is totally unacceptable in a screening procedure. Most white cells in voided urine from girls come from the vulva, as can be shown by comparison of voided and suprapubic specimens,² and as Dr. Meadow and colleagues demonstrated.

Clinicians who regularly microscope fresh, unstained urine have been impressed by the significance and ease of visualization of motile bacteria in both uncentrifuged^{3,4} and centrifuged specimens.⁵ Kunin⁵ has reported excellent correlation between the number of bacteria visualized in a fresh, unstained urine deposit and bacterial counts.

Examination of a drop of fresh, uncentrifuged urine by high power magnification, using the most modest of microscopes, would identify at least 90% of bacteriuric schoolgirls. As Dr. Savage observed, these urines are usually frankly turbid on naked eye

inspection and contain many millions of bacteria per ml., allowing ready visualization when uncentrifuged specimens are examined under high power. In surveys of the type reported it is possible that a suitably trained technician, aware of the significance of bacteria visualized in a fresh deposit, would prove a more economical means of detecting bacteriuria than any of the alternatives suggested by Dr. Meadow and colleagues.

Would it be unreasonable to suggest that urine microscopy be carried out by school medical officers at the medical examination? The large numbers of children with bacteriuria thus detected would provide an opportunity to study the natural history of asymptomatic bacteriuria of schoolgirls. This is desirable because we must either accept the circumstantial evidence that the condition bears some relationship to chronic pyelonephritis of adults and screen for the condition, or embark upon a controlled trial of treatment versus non-intervention, and thereby perhaps avoid unnecessary exposure of thousands of children to long-term chemotherapy. It should be remembered that Kunin's⁶ excellent study indicated that renal involvement, as judged by antibody studies, was unusual in girls with asymptomatic bacteriuria, but his study does not tell us about natural history, because his cases were all treated.

Now that the incidence has been established in this country, the prognosis of the condition requires urgent clarification. Certainly it cannot be deduced from children attending specialized clinics for pyelonephritis,⁷ nor from the incidence of renal scarring at different ages.⁸—I am, etc.,

J. M. LITTLEWOOD.

Department of Paediatrics and
Child Health,
University of Leeds.

REFERENCES

- 1 Pyles, C. V., and Eliot, C. R., *American Journal of Diseases of Children*, 1965, 110, 628.
- 2 Neuman, C. G. H., O'Neill, Pauline, and Parker, A., *British Medical Journal*, 1967, 1, 277.
- 3 Dunn, P. M., Hine, L. C., and MacGregor, M. E., *British Medical Journal*, 1964, 1, 1081.
- 4 Lapides, J., and Alkema, H. D., *Investigative Urology*, 1967, 4, 485.
- 5 Kunin, C. M., *New England Journal of Medicine*, 1961, 265, 589.
- 6 Kunin, C. M., Deutscher, R., and Paquin, A., *Medicine (Baltimore)*, 1964, 43, 91.
- 7 Smellie, J. M., Hodson, C. J., Edwards, D., and Normand, I. C. S., *British Medical Journal*, 1964, 2, 1222.
- 8 Hodson, C. J., and Wilson, S., *British Medical Journal*, 1965, 2, 191.

Hypertension and the Pill

SIR,—I am interested to read the opinion of your expert contributor in "Any Questions?" (14 June, p. 679) that hypertension as a complication of the contraceptive pill is extremely rare. For this reason I would like to report the following case.

A 19-year-old girl was put on Orthonovin (norethisterone 2 mg. and mestranol 0.1 mg.) for contraceptive reasons and her weight rose to 11 st. 3 lb. (71.2 kg.) and her blood pressure to 200/100 mm. Hg, whereas two years previously her weight had been 10 st. 7 lb. (66.6 kg.) and her blood pressure 115/70 mm. Hg. She was therefore changed to Norinyl-1 (norethisterone 1 mg. and mestranol 0.05 mg.), which only contains half the amount of norethisterone, and her weight fell to 10 st. 7 lb. (66.6 kg.), and her blood pressure to 130/80 mm. Hg. At the same time she was also put on chlorothiazide and Slow-K, but because this

Relation between P.E.F. and M.M.E.F. as the severity of airways obstruction varied in three asthmatic patients.