Immunization Schedules

SIR,—The immunization schedules recently published under the heading "Today's Drugs" (19 September, p. 691) contribute to the clarification which is always necessary in this field. The series of immunizations to be performed in the whole children's population must be subject to as much agreement as possible. We took part in a discussion in the *B.M.J.* on this in 1959.¹

The questions raised have since been the subject at the International Children's Centre of several inquiries by several teams both in the field and in the laboratory. The results obtained have been published in part.² On the basis of these results, we recommend the following immunization schedule (up to 15 years of age):

Age	Immunizations
3, 4, 5 months	D.P.T. (adsorbed vaccine) + live vaccine polio immunization
12 months	Smallpox vaccination
16-18 months	D.P.T. booster
1-2 years	Measles vaccine (live)
6 years	Polio immunization booster
7-8 years	D.T. booster
10 years	Smallpox revaccination
11 years	Polio immunization booster

D.P.T. = Diphtheria, Pertussis, Tetanus. D.T. = Diphtheria, Tetanus.

These propositions differ from those published by you on several points, especially with reference to the age of starting. In effect, we have obtained practically equivalent results by starting vaccination at the age of three months and of six months with an adsorbed D.P.T. vaccine. Similar findings have been made in Great Britain.³ Also, and unlike the inactivated vaccine, the live polio vaccine administered at three, four, and five months simultaneously with the D.P.T. injections has been shown to be quite effective. It would appear wise to afford protection during the first six months against poliomyelitis and above all against pertussis. We are not in favour of giving the pertussis booster at five years. Instead of a D.P.T. injection at that age, we advise a D.T. booster at seven to eight years.

There is no contraindication to giving measles vaccine beginning at the end of the first year prior to smallpox vaccination. But French regulations make it difficult to delay the latter beyond the age of one year. Smallpox revaccination is practised in the 11th year of life and not at school entrance.

It should be noted that B.C.G. immunization is not listed on the foregoing chart because it is difficult to set a precise date for its administration. B.C.G. is often recommended to be given in the first month of life. However, this advice is not always followed. In any event we insist that it be given prior to entering elementary schools. The risks from childhood tuberculosis, even in many so-called developed countries, justified the effort to protect the child as soon after birth as possible.—We are, etc.,

ROBERT DEBRÉ,
FRANÇOIS-MICHEL LEVY.

International Children's Centre,
Paris 16.

REFERENCES

- Emery, J. L., *British Medical Journal*, 1959, 2, 925.
- Mandé, R., et al., *Archives Françaises de Pédiatrie*, 1969, 26, 1553.
- Butler, N. R., Voyce, M. A., Burland, W. L., and Hilton, M. L., *British Medical Journal*, 1969, 1, 663.

Emphysema in Coalworkers

SIR,—There is now a revised 1970 edition of the booklet *Notes on the Diagnosis of Occupational Diseases*¹ prepared by the Department of Health and Social Security. On pages 23 and 24 of this booklet notes are given concerning Prescribed Occupational Disease No. 17—"Poisoning by Nitrous Fumes." The last sentence of the notes reads as follows: "There is no satisfactory evidence that exposure to concentrations of nitrous fumes which are insufficient to cause acute pulmonary oedema, results in chronic ill-health."

In my opinion this statement is erroneous and misleading and should be amended. It is this statement which is influencing some medical boards and medical appeal tribunals in refusing certification to a number of miners with advanced emphysema and a clear history of excessive exposure to fumes from shot-firing. I have outlined (10 October, p. 115) the evidence for my statement that "Fumes from shot-firing underground (nitrous fumes) can cause emphysema" and would be glad to furnish fuller evidence to the authorities concerned.

I would add that many of these miners with advanced emphysema following excessive exposure to the fumes from shotfiring underground are far more disabled than most men certified as suffering from pneumoconiosis, and many of them are precluded from gainful employment as a result of their disability.—I am, etc.,

M. C. S. KENNEDY.

Department of Respiratory Physiology,
City General Hospital,
Stoke-on-Trent.

REFERENCE

- Department of Health and Social Security. *Notes on the Diagnosis of Occupational Diseases Prescribed under the National Insurance (Industrial Injuries) Act, 1965*. London, H.M.S.O. 1970.

Cerebral Malaria and Intravascular Coagulation

SIR,—We were very interested to read the paper on disseminated intravascular coagulation with fatal haemorrhage in cerebral malaria by Dr. D. Borochovitz, and others (20 June, p. 710).

In 1968 we saw a 31-year-old male patient with acute cerebral malaria. The clinical course was fatal. The most promi-

nent clinical signs were an irreversible circulatory failure and a severe haemorrhagic diathesis with bleeding from all sites of venepunctures. Diagnosis was made by blood smears revealing numerous trophozoites of *Plasmodium falciparum* in the erythrocytes and was confirmed at necropsy.

Coagulation studies showed a defibrination syndrome: bleeding time >7 min. (normal 2-4 min.), platelets 77,500/cu.mm (normal 150,000-300,000/cu.mm), recalcification time >5 min. (normal 90-120 sec.), plasma thrombin time >7 min. (normal 11-15 sec.), single-stage prothrombin time 8% (normal 65-125%), fibrinogen 35 mg./100 ml. (normal 160-450 mg./100 ml.), factor II 6% (normal 65-120%), factor V 3% (normal 60-120%), and factor VII/X 13.5% (normal 65-125%). These findings are consistent with the observations of Drs. Borochovitz and colleagues.

In addition, we detected fibrinogen degradation products in our patient's serum, using the single radial immunodiffusion method on Partigen-Fibrinogen plates (Behringwerke A.G., Marburg-Lahn).¹ Further studies—for example, factor VIII-determination and euglobulin lysis time were not possible, because the patient died soon after admission. The detection of fibrinogen degradation products is in agreement with the findings of Dennis and others.²

We therefore believe that in our patient there was an additional stimulation of fibrinolytic activity secondary to the generalized intravascular coagulation. Increased fibrinolytic activity was also demonstrated by Dennis and colleagues³ in most of their cases of drug-resistant *Plasmodium falciparum* malaria and suspected by Devakul and others⁴ in two of their cases with cerebral malaria.—We are, etc.,

D. PAAR,
ERIKA KÖNIG,
INGRID FONK,
G. BRITTINGER.

Central Laboratory and Division of
Haematology,
Department of Medicine,
Ruhr-University, Essen, Germany.

REFERENCES

- Mancini, G., Carbonara, A. O., and Heremans, J. F., *Immunochemistry*, 1965, 2, 235.
- Dennis, L. H., Eichelsberger, J. W., Inman, M. M., and Conrad, M. E., *Blood*, 1967, 29, 713.
- Dennis, L. H., Eichelsberger, J. W., and Conrad, M. E., *Clinical Research*, 1966, 14, 338.
- Devakul, K., Harinasuta, T., and Reid, H. A., *Lancet*, 1966, 2, 886.

Hospital Staffing

SIR,—On 3 December the Central Committee for Hospital Medical Services (*Supplement*, 19 December, p. 63) endorsed the authority of the Joint Consultants' Committee to continue discussions with the Department of Health on hospital staffing—the basis of which may be found in the progress report in 1969¹ on discussions between representatives of the Health Departments and the Joint Consultants' Committee on hospital medical and dental staffing.

Many believe, however, that the progress report is simply the arithmetical interpretation of the report of the working party on the responsibilities of the consultant grade,² a document rejected both nationally through the medical press and centrally by the Central Committee for Hospital Medical Services.

Furthermore, though it may appear superficially to solve the problems of careers in hospital medicine it may so profoundly alter staffing and standards in hospital as to result ultimately in massive medical emigration. The Health Departments, meanwhile anticipating the outcome of discussions, have placed an absolute embargo on registrar appointments—even though there is growing evidence that, particularly in new departments, this may present serious problems of understaffing.

The disadvantages of the progress report to both those in training and consultants have been adequately summarized in the introduction to M. A. R. Freeman's "New Deal,"³ and it is this paper, that was carefully examined by the North-West Metropolitan