he will be 6,000 feet (2,000 km.) up and nearly on the equator.—I am, etc.,

J. B. TAYLOR.

Paignton, Devon.

REFERENCE

- ¹ *Brit. med. J.*, 1966, 1, 1186.

Rehabilitation in the R.A.F.

SIR,—There is no doubt that the medical rehabilitation service established in the Royal Air Force during the last world war provided a great stimulus to the subsequent development of rehabilitation in many other parts of the world, and thus it is one of the most significant contributions of R.A.F. medicine.

It was surprising to find in a historical article, presumably an official one, on medicine in the R.A.F. (5 October, p. 48) that Squadron Leader J. A. Hopson should have got some of his facts wrong. Medical rehabilitation was introduced in the R.A.F. not by Group Captain O'Malley, as he says, but by Sir Reginald (then Mr.) Watson-Jones, civilian consultant orthopaedic surgeon to the R.A.F., and it was his inspiration and leadership which gave it its dynamics. O'Malley certainly made a considerable contribution on the organizational and promotional sides; he was an excellent administrator and public relations man, but he did not reach the rehabilitation scene before the end of 1943, by which time it was already well established.—I am, etc.,

A. ZINOVIEFF.

Department of Physical
Medicine,
Dryburn Hospital,
Durham.

** We have shown Dr. Zinovieff's letter to Squadron Leader J. A. Hopson, who writes: "It was not my intention to suggest that the creation of a rehabilitation service in the R.A.F. was the work of one man. I would suggest that Dr. Zinovieff is being less than fair when he states that Group Captain O'Malley did not reach the rehabilitation scene before the end of 1943. In fact he demonstrated an interest as early as 1935, and in 1940, at the request of the Air Member for Personnel, set out in great detail what he personally meant by the term rehabilitation. According to him it should mean mental, emotional, and physical restoration of each individual. A number of very eminent orthopaedic surgeons have contributed to the successful development of rehabilitation in the R.A.F., and we are specially pleased that Sir Reginald Watson-Jones has retained his interest in the Service and is an Honorary Civil Consultant in Orthopaedic Surgery to the R.A.F."—Ed., *B.M.J.*

Methaemoglobinaemia and Paracetamol

SIR,—Paracetamol in therapeutic dose rarely causes adverse reactions. Though it may produce methaemoglobinaemia both in cats¹ and in man² in abnormally high dosage, this has not been found in man after therapeutic amounts. The following case report is therefore of interest.

A 20-year-old woman was noticed to be cyanosed six hours after taking Panadol (paracetamol B.P.) tablets for post-partum pain. No abnormality was detected in the cardiovascular and

respiratory systems. Investigations confirmed the presence of methaemoglobinaemia with a plasma paracetamol level of 0.7 µg./ml. She made an uneventful recovery, being free from cyanosis 24 hours later.

Paracetamol was thought to be responsible for the methaemoglobinaemia in this case, although she had also received pethidine 150 mg. intramuscularly and Lethidrone (nalorphine hydrobromide) 10 mg. intravenously 36 hours previously, and Soneryl (butobarbitone) 100 mg. 12 hours before taking the paracetamol tablets. She had not taken paracetamol prior to this, although she had had butobarbitone before without ill-effect. Further provocation with paracetamol was not considered. Although rarely responsible in therapeutic dose, paracetamol should therefore be considered as a possible cause in all cases of methaemoglobinaemia.

We are grateful to Mr. Andrew Robertson, Laboratory Manager, Winthrop Laboratories, Fawdon, Newcastle upon Tyne, for arranging the paracetamol assay.

—We are, etc.,

D. MACLEAN.

P. G. C. ROBERTSON.

SHEILA BAIN.

Royal Infirmary,
Dundee.

REFERENCES

- ¹ Thomas, J., McLean, S., Starmer, G. A., and Carroll, P. R., *Lancet*, 1966, 2, 1360.
² Kiese, M., and Menzel, H., *Arch. exp. Path. Pharmacol.*, 1962, 242, 551.

Crohn's Disease

SIR,—The review on Crohn's disease presented by Professor G. Slaney (3 August, p. 294) presents an excellent and extremely informative article on this disease.

However, I must draw attention to a minor error which appears in the article. Professor Slaney states that "the non-absorbable sulphonamide preparations, especially salicylazosulphapyridine 1.5 g. q.d.s., may be useful during an acute flare up." In fact Salazopyrin (salicylazosulphapyridine) is absorbed to some extent from the gastrointestinal tract. There are a number of papers which show this.¹⁻³ In one of these,² it is shown that a dosage of 1 g. Salazopyrin daily for five days in humans gives Salazopyrin blood levels of the order of 2 mg./100 ml.—I am, etc.,

R. H. ROUSELL,

Medical Adviser,
Pharmacia (Great Britain) Ltd.

REFERENCES

- ¹ Helander, S., *Acta physiol. scand.*, 1945, 10, Suppl. No. 29.
² Böttiger, L. E., and Möllerberg, H., *Acta med. scand.*, 1959, 165, 241.
³ Hanngren, A., Hansson, E., Svartz, N., and Ullberg, S., *Acta med. scand.*, 1963, 173, 61, 391.

Potential Hazards for Diabetics

SIR,—This association drew attention in 1966¹⁻³ to a possible hazard in diabetic control for patients inadvertently changing from insulin prepared from one species to that of another. Hypoglycaemia on substituting porcine for bovine insulin was the original concern. Case reports were published⁴ and others have come to the attention of the British Diabetic Association, which has issued a caution through its quarterly journal.⁵

A meeting convened by the association and attended by representatives of the profession,

the Ministry of Health, insulin manufacturers, and pharmacists agreed an interim statement which included the following information supplied by the manufacturers on the present composition of their insulin. It is subject to the proviso that shortage of the appropriate pancreas may force manufacturers to add small quantities of pancreas of another species.

British Insulin Manufacturers.—A.B. Insulins Ltd.; Boots Pure Drug Company Ltd.; and Burroughs Wellcome & Co. All insulin preparations, including British I.Z.S.: 100% bovine.

Weddel Pharmaceuticals Ltd.—All insulin preparations 100% bovine.

Novo Industri A/S.—Semilente (I.Z.S. Amorphous) 100% porcine; Ultralente (I.Z.S. Crystalline) 100% bovine; Lente (30% Semilente, 70% Ultralente mixture); Actrapid 100% porcine; Rapitard 17% porcine and 83% bovine; and Soluble (unmodified) insulin and Portamine Zinc insulin: 70% bovine and 30% porcine.

A working party has been established to examine whether a definite clinical risk exists and advise on further investigations. Reports of individual cases in which change of species of origin of insulin appears to have caused either significant hypo- or hyperglycaemia would be welcome, and should be sent to Dr. Harry Keen (Secretary, Medical Advisory Committee, British Diabetic Association), Department of Medicine, Guy's Hospital Medical School, London Bridge, S.E.1.—We are, etc.,

D. M. HILL,

P. D. BEWSHER,

Joint Honorary Secretaries,
Medical and Scientific Section,
British Diabetic Association.

London S.E.5.

REFERENCES

- ¹ Young, B. A., and Kellock, T. D., *Brit. med. J.*, 1966, 2, 1010.
² Young, B. A., and Kellock, T. D., *Lancet*, 1966, 2, 910.
³ *Lancet*, 1966, 2, 897.
⁴ de Mowbray, R. R., *Lancet*, 1966, 2, 1027.
⁵ *Balance*, 1968, 12, 89.

Another Side-effect of the "Pill" ?

SIR,—About a year ago I drew attention to the effect of the oral contraceptive on the tissues supporting the teeth.¹ Personal communications have confirmed the similarity between the lesions of pregnancy and those of the patient taking the "pill."

Lindhe and Björn² have shown a statistical increase in the exudate from the gum tissues of 115 women studied. Softening of these periodontal tissues with severe gingivitis was reported by Lynn.³ His patient had been self-medicating with 30 mg. of an oral contraceptive containing norethynodrel and mestranol daily. The condition improved when the dose was reduced to 5 mg. and it disappeared when she stopped taking the pill altogether.

Little attention appears to have been directed to a further side-effect of the contraceptive tablet. It is well known that the joints of the pelvis become more relaxed during pregnancy and pseudopregnancy. The support of the teeth in the jaws is by a similar ligamentous sling. At a recent meeting of dentists in Manchester⁴ it was reported that patients who were undergoing a course of orthodontic treatment were suddenly placed at an advantage if they became pregnant. Teeth that had resisted the influence of

springs and plates became easier to move. It was, as the speaker said, as if the guy ropes supporting the teeth had been slackened off. He doubted if it would be common practice for a dentist to prescribe a hormone, using the side-effect as the reason for exhibiting the drug.

It does, however, raise another interesting question and we could surely sympathize with the conscience of the lady who might explain that she was given the pill by her dentist to straighten her teeth.—I am, etc.,

D. N. BARBER.

Manchester 21.

REFERENCES

- ¹ Barber, D. N., *Brit. med. J.*, 1967, 4, 417.
- ² Lindhe, J., and Björn, A. L., *J. Periodont. Res.*, 1967, 2, 1.
- ³ Lynn, B. D., *Oral Surg.*, 1967, 24, 333.
- ⁴ *Manchester Dental Study Forum* 13-15 September 1968.

Oral Contraceptives and Thromboembolic Disease

SIR,—In both papers, one by Drs. W. H. W. Inman and M. P. Vessey (27 April, p. 193) and a second by Drs. M. P. Vessey and Richard Doll (p. 199), on the relationship of oral contraceptives to thromboembolic disease careful attention is paid to a number of factors that might have introduced bias into the studies. However, no mention is made regarding the basic design of the studies which appears to bias the selection of cases for analysis against the contraceptive users.

In the first study, of 499 cases reviewed from death certificate data, 190 were excluded for a variety of reasons. Among those excluded from consideration were 94 cases, the majority of which, presumably, would be women who were not "pill takers" (49 spinsters, 18 widowed, divorced, or separated, and 27 not registered with a physician—since the "pill" is a prescription drug, such women would not likely be on it). If these 94 cases were included in the study and a matched number of controls also included (which would not alter this group significantly), the number of fatalities from thromboembolism in contraceptive users would be significantly altered to approximately 13% instead of the given figure of 17% of the cases. The simple fact that the remaining 87% of the deaths so analysed occurred in non-users also bears emphasis.

Another curious fact brought out in this study, one which is quite difficult to understand, is that in the group of women dying of thromboembolism those contraceptive users who were deemed to have "predisposing conditions" did not show a significant difference in the incidence of pulmonary embolism from the non-users. Yet those women who were deemed to be healthy, that is without "predisposing causes," were found to have a striking predilection to thromboembolic disease when they took contraceptive pills. Of further interest is that in this same healthy group, the expected incidence of deaths in contraceptive users was only one-fourth of the actual incidence, while the expected incidence of deaths among the non-users was twice that of the observed number. Thus, I am puzzled why there seems to be an increased incidence of pulmonary embolism in "healthy pill takers" while there is no increase in those who already have conditions predisposing to thromboembolic disease. Likewise, I find it difficult to arrive at an explanation for the difference in expected incidence of deaths from the observed incidence in the control group.

In the second paper, which consisted of a review of records of 399 women admitted to hospitals with venous thrombosis or pulmonary embolism, only 58 were considered acceptable for analysis. Most important in this "selection," again, is that of those excluded for a variety of reasons 43 were excluded because they were spinsters or widowed. Had this group been included (with an equal number of controls in the same category), the final figures would likely have been quite different. Presuming this group to be comprised primarily of non-users, instead of 26 of 58 contraceptive users having thromboembolic disease, we find the figures would correct to 30 of 101; and for the controls, instead of 10 of 116, they would correct to 18 of 202. Thus, the incidence of thromboembolic disease in those using oral contraceptives would be approximately three times that of non-users rather than the reported incidence of 12 times.

One might consider the liberties I have taken with these data to be unjust, but none the less these "adjustments" serve to point out what appears to be a significant fault in the design of these studies upon which the authors did not comment. Thus it would seem, when one designs a study based on total mortality statistics or total hospital admissions for a specific disease occurring in all women, and then compares only married women, even though the controls are also married, he introduces an unfair bias into the study which may materially alter the results. Only by a completely controlled prospective study can the information on thromboembolic disease and contraceptive use sought by these studies be precisely defined.

It seems unfortunate that this work has received such wide recognition as having answered this critical question. It is indeed, however, refreshing to know that, despite the "evidence" set forth by the authors, that it is apparently still safer to take the pill than to drive your car or to crawl into bed without taking your pill.—I am, etc.,

JOHN J. DELLER, JUN.

Department of Medicine,
Letterman General Hospital,
San Francisco, California, U.S.A.

Iliacus Haematoma and Nerve Palsy

SIR,—I was interested in a report by Mr. C. B. d'A. Fearn (12 October, p. 97) of the iliacus haematoma syndrome complicating anticoagulant treatment. Although, as was stated in the discussion, it is more frequently a complication of haemophilia and Christmas disease, an iliacus haematoma from direct trauma in an otherwise normal individual can be associated with the femoral nerve palsy.

An instance of this was recently encountered in a boy of 16, who was admitted to the Radcliffe Infirmary after a fall on to his left hip from his motor-cycle. There was bruising around the iliac crest anteriorly and over the greater trochanter. An x-ray of his pelvis revealed a comminuted fracture of the antero-superior iliac spine. The following day he complained of numbness over the front of his left thigh, and was found to have loss of sensation to light touch and pinprick over the femoral nerve distribution and marked weakness of his quadriceps with loss of knee extension against gravity. There was a large swelling on the medial aspect of the ilium, but no definite evidence of a psoas swelling. Within 48 hours both sensory disturbance and quadriceps power had recovered completely.

The site of the trauma above the inguinal ligament would tend to support the hypothesis of Goodfellow *et al.*¹ that nerve compression in this syndrome results in distension of the ilio-psoas compartment.—I am, etc.,

Accident Service,
Radcliffe Infirmary,
Oxford.

T. R. FISHER.

REFERENCE

- ¹ Goodfellow, J., Fern, C. B. d'A., and Mathews, J. M., *J. Bone Jt Surg.*, 1967, 49B, 748.

Drinking Drivers

SIR,—Many thousand drivers have failed the road-side "breathalyser" test. This surprises few of us with experience in this field. However, many hundred drivers who fail the second breath test are subsequently found to have a blood alcohol level of less than 80 mg./100 ml.

It seems time now for the British Medical Association to recommend to the police that such drivers be given the opportunity of washing their mouths and dentures with water before a second breathalyser test is demanded. This seems an inexpensive way of avoiding trouble.—I am, etc.,

JAMES HERD HENDERSON,

Surgeon to "A" Division,
Renfrew and Bute Constabulary.
Greenock, Renfrewshire.

Withdrawal of Drugs

SIR,—Mr. R. F. Heys (14 September, p. 682) is justifiably concerned about the sudden withdrawal of drugs from the market without prior notice.

Some time ago the anaesthetists of Great Britain found themselves unable to obtain what was virtually the only anaesthetic suitable for spinal anaesthesia (heavy Nupercaine; cinchocaine). Those of us who think subarachnoid block has still an important part to play in modern anaesthetic technique are rapidly nearing the end of our stocks of this drug, and are anxiously awaiting the outcome of the Dunlop Committee's recommendations on the matter. Refusal by them to authorize the distribution of an alternative drug suitable for subarachnoid anaesthesia would virtually prohibit the use of this technique in Great Britain.—I am, etc.,

J. F. RICKARDS.

South Staffordshire Medical Centre,
Wolverhampton.

Medical Teachers' Training College

SIR,—Medical teaching is today one of the few disciplines in which the teacher is not taught how to teach. However, in the vast field of education a potential teacher has to go to a teacher training college, where he can learn methods of teaching for both children and adults. Here, too, he learns how to give a lecture or conduct a tutorial. The subject matters little, provided the teacher has learnt to project it.

Even more important than a lecture or tutorial is a method of teaching, perhaps difficult to master, but probably more effective in results. I refer, of course, to the method of repetition where the student learns a set portion before the actual lecture and