of the authorities" is a narrow one and views the situation out of context. The truth of the matter is that Africans are relegated to restricted areas—Bantustans—which are a necessary step for the implementation of separate development. These areas, other than not being open to all races, are the most economically impoverished parts of the country. These areas comprise just less than 13% of the Republic's surface area and account for 1·99% of the total product of South Africa. In 1966-7 the output per head was about one eighteenth of that in the remainder of the Republic.[2] These undeniable facts are hardly conducive to attracting medical personnel into these "homelands" even if they were able to go.

The assertion by Dr. McKechnie that "the medical profession in South Africa is as concerned with discrimination as she [Dr. Dowling] is" may be argued. We believe that in King Edward VIII Hospital, Durban, in the medical school and in a few liberal pockets in the country, a great deal of goodwill exists amongst the White doctors for us, but that it is too often misdirected.—

—We are, etc.,

H. M. COOVADIA
F. M. MEER

Departments of Paediatrics and Child Health and Anaesthetics,
King Edward VIII Hospital,
Durban,
South Africa

1 *Rand Daily Mail*, May, 1972.
2 Van der Horst, S., *Separate development: is a Consensus Possible?* South African Institute of Race Relations, Johannesberg, 1972.

Aetiology of Varicosity

SIR,—I am greatly indebted to Mr. D. P. Burkitt for such scholarly support (3 June, p. 556) for my conception of the aetiology of varicose veins, deep vein thrombosis, and haemorrhoids. In view of the issues at stake, both in terms of economics and of human suffering, I venture to offer a few comments, in the hope that they may be found constructive.

There is another related venous ailment, which I believe to be deeply revealing—varicocele. This condition occurs on the left side in 90% of the cases and can easily be explained by unnatural colonic pressures—but not, I submit, by any other pressures. I also submit that in suitable cases of this condition a loaded left iliac colon can actually be palpated through the abdominal wall. The bearing of this on the aetiology of other types of varices is clear.

Mr. Burkitt quotes the low incidence of deep vein thrombosis and pulmonary embolism in the immigrants in Birmingham from India and Pakistan. But these immigrants form a younger age group, and Morrell and others[1] have shown in a striking chart how tremendously the incidence of this condition falls with age. Therefore, I suggest that this particular evidence does not have any deep implications.

Very real, however, are the implications of another view mentioned, that past straining at stool may produce changes in the veins which predispose to postoperative thrombosis. Quite apart from the fact that such straining could not account for the big clinical preponderance in the left leg, the implications of this view would be gloomy in the extreme for those undergoing operation or confined to bed, since nothing can be done to alter back the structure of the veins. Fortunately, J. V. H. Kemble[2] has collected evidence recently from 280 patients about to undergo surgery that the presence or absence of varicose veins did not affect the chances of a patient developing deep vein thrombosis, which fact strikes decisively at the view just given as I see it.—I am, etc.,

T. L. CLEAVE

Fareham, Hants

1 Morrell, M. T., Truelove, S., and Barr, A., *British Medical Journal*, 1963, **2**, 830.
2 Kemble, J. V. H., *British Journal of Hospital Medicine*, 1971, **6**, 721.

Medical Audit in North America

SIR,—In Professor Ian R. McWhinney's review of medical audits in the U.S.A. and Canada (29 April, p. 277) he states that accreditation of hospitals has been made under the auspices of the Joint Commission on Hospital Accreditation. The Joint Commission was at one time responsible for accreditation of hospitals in both countries. For the past 13 years, full responsibilities for the accreditation of hospitals in Canada has been assumed by the Canadian Council on Hospital Accreditation[1]—an agency surprisingly not mentioned by your contributor.

A further error occurs in Professor McWhinney's statement that "In Ontario, hospitals are required by law to have four committees: credentials, records, admission and discharge, and therapeutic abortion." Ontario public hospitals (except those for convalescent or long stay patients) are also required to establish a tissue committee or a medical audit and tissue committee.[2]

The most recent publication of the Canadian Council on Hospital Accreditation[3] does not specifically delineate the precise committee structure required to evaluate standards of hospital medical care. It does, however, provide sufficient information to permit most hospitals to establish practical systems for this purpose. In addition, it recommends that the utilization of all sections of the hospital operation and adjunct services be carefully scrutinized in order to determine that the most effective use is being made of all available resources for the ultimate benefit of the patient.—I am, etc.,

J. D. MEDHURST

Toronto East General and Orthopaedic Hospital,
Toronto, Ontario, Canada

1 *Hospital Accreditation Guide Compendium*, Canadian Council on Hospital Accreditation, Toronto, 1967.
2 Canada, Federal Government: Public Hospitals Act. *Hospital Management Regulation* 729, p. 4, Toronto, Queen's Printer and Publisher, 1972.
3 *Guide to Hospital Accreditation*, Canadian Council on Hospital Accreditation, Toronto, 1972.

Retaining Intravaginal Medication

SIR,—A considerable proportion of local vaginal medication may rapidly be lost by direct seepage through the introitus. In a recent trial, a disposal plastic cup known as Tassaway was used. Designed primarily to collect menstrual blood, this looks superficially like a cervical cap. It was inserted well below the cervix in the lower vagina, the four circular ridges near its rim ensuring a good seal. The device was removed by pulling on a tab at its base, together with posteriorly directed pressure to release the partial vacuum in the vagina above.

Thirteen normal non-menstruating subjects volunteered, 12 of whom had previously used Tassaway for menstrual protection. The medication chosen was Betadine vaginal gel (Napp Laboratories Ltd.), which contains povidone iodine (USNF) 10% w/w. It is possible to titrate the iodine content using standard sodium thiosulphate and starch indicator, and hence to assay the amount of gel after any treatment interval.

Six subjects received 7·9 g (one applicatorfull) of the gel followed by immediate insertion of a Tassaway and the application of a protective pad with the patient recumbent. They were asked to pursue their normal activities and to return for examination four hours later. The procedure and time scale were identical for the second group (seven subjects) except that the Tassaway was not inserted until two hours after the Betadine.

In the first group (excepting one subject in whom there was immediate marked leakage when the device was inserted in the squatting, not recumbent position) approximately 70% of the dose was recoverable from the Tassaway after four hours. The amount lost on the sanitary pad was either negligible or undetectable. In all seven subjects in the second group there was heavy staining on the pads and no iodine could be detected in the Tassaways by starch indicator. Speculum examination showed hardly a trace of the characteristic gel colour. This implies a marked loss from the vagina in this group assuming—as in the first group—negligible loss once the devices were in use.

There was no subjective discomfort reported and examination revealed no evidence of tissue damage. In the first group it is of particular interest that the retained medication was not only within the device, but a significant proportion was seen bathing the upper vagina and cervix. Depending on the patient's posture, a continuous redistribution of the water miscible gel between Tassaway and vagina may be occurring.

Further studies are planned to confirm this suggestion and also to use Tassaways combined with conventional medication to treat vaginitis of varying aetiology, in order to overcome the patient's subjective problems of leakage and perhaps to shorten the treatment period.

It is a pleasure to acknowledge the assistance of Mr. D. N. S. Robertson and Mr. D. Methuen, and Dr. J. C. Wood and Mr. D. J. Whitehouse.

—I am, etc.,

JOHN GUILLEBAUD

Royal Buckinghamshire Hospital,
Aylesbury, Bucks

Rickets in Glasgow Pakistanis

SIR,—We have read with interest the paper on rickets and osteomalacia in the Glasgow Pakistan community by Dr. J. A. Ford and others (17 June, p. 677). A similar survey has been conducted from this department, and the same conclusions were reached.[1]

The Glasgow workers in their discussion postulate that the apparent vitamin D deficiency found in some Pakistani children may reflect genetic differences in the conversion of cholecalciferol (vitamin D_3) to its more polar active metabolites. We have investigated the fate of [1, 2,—$^3H_2$, 4—^{14}C] cholecalciferol in three adult osteomalacic patients (two Pakistani, one Indian) to whom