In a highly parasitized community such as that here examined, the frequency of eosinophilia, including pulmonary eosinophilia as revealed by the sputum, is not a new finding, for there have been many reports associating eosinophilic infiltration of the lungs with parasitic disease (Söderling, 1939; Wintrobe, 1951). The infiltration syndrome (Loeffler, 1932) should thus be expected in any condition in which there is a substantial increase in the number of circulating eosinophil leucocytes for any length of time—for example, periarteritis nodosa (Middleton and Carter, cited by Tisell, 1941).

As evidence accumulates there seems to be less doubt that the state of eosinophilia, of whatever primary aetiology, embodies an increase in the number of eosinophil leucocytes circulating in the blood, their subsequent migration (? selective segregation) into the tissues of the lungs, and their eventual discharge into the respiratory passages and so out of the body.

Summary

Simultaneous examination of blood and sputum for eosinophils was made in 205 African natives in an area where the incidence of parasitic infestation is high.

The results obtained suggest that there is some association between eosinophilia of the blood and that of the sputum.

This association is discussed in relation to the reports of pulmonary eosinophilic infiltration complicating parasitic disease.

It is suggested that eosinophilia of the sputum and its preceding eosinophilic infiltration of the lungs are integral parts of a general eosinophilia, and that the demonstration of eosinophils in sputum indicates that an eosinophilia is or has recently been in progress.

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The annual report of the National Institute for the Blind draws attention to the manifold activities now being undertaken by that organization. Of particular interest is the development of the new solid-dot Braille, which composes dots of plastic ink on paper instead of impressing them, and which will make possible the much cheaper production of books, periodicals, music, etc., for the blind. Moon type is a useful complement to Braille, especially for those who become blind in old age. It was developed by Dr. William Moon (1818-94), who lost the sight of one eye at the age of 4, following an attack of scarlet fever, and became totally blind at the age of 22. Although Moon literature is costly to produce, the Institute has continued to supply it. Nearly 50,000 volumes of literature and 2,000 volumes of music were among the year's output of the Institute during the year. The physiotherapy school continues to make its useful contribution to medicine; an arrangement made with the Whittington Hospital, Highgate, has enabled skilled physiotherapy students of the Institute to give 4,000 treatments a month to out-patients. The Institute has begun a new policy whereby its members may obtain Braille watches, clocks, literature, and other goods at greatly reduced cost.

Medical Memoranda

Prevention of Post-operative Backache in Women

Some women suffer from low backache following prolonged abdominal or vaginal operations. The pains are sometimes so excruciating after awakening from the anaesthetic (and commonly during the first post-operative day) that only morphine brings relief. Some of these patients say that they suffered more from the backache than from the effects of actual operation, and this backache may persist for months after the operation.

This kind of backache is due to the forcible flattening of the lumbar spine curvature while the deeply anaesthetized patient is stretched out on a flat operating table. During vaginal operations in the extreme lithotomy position this flattening of the curvature is aggravated by extreme flexion of the thighs. The pains are caused partly by pulling on the interlumbar and sacro-lumbar ligaments, which sometimes leads to slight dislocation of the intervertebral joints.

In other patients, predisposed to degenerative changes in the intervertebral disks, the widening of the lumbar bodies by the forcible flattening of the curvature leads to some protrusion of a disk or disks, with resultant pressure on the dura mater, causing pains similar to those of the common disk lesions. Cyriax calls this kind of pain "dural pains." Deep anaesthesia leads to relaxing of the lumbar muscles, which facilitates the flattening of the curvature. Since the introduction of the relaxing curare preparations the evidence tends to suggest that this kind of backache has become commoner.

In women operated on in the lithotomy position another factor may add to this flattening of the lumbar curvature. If, after the operation, the legs are not put gently into the normal position, but instead one leg is first stretched while the other is still fixed to the stirrup, undue force is applied to the sacro-iliac joints, causing strain to the ligaments and resulting in mild dislocation of these joints.

The flattening is still further increased by the routine nursing with pillows arranged in such a way that the lumbar region remains unsupported. Nurses have for years been trained to adjust the pillows in this manner; four to six pillows are usually placed under the shoulders and back to keep the patient in a propped-up position, but no attention is paid to the fact that the lumbar region is left entirely unsupported. One can push a hand underneath, as if in a tunnel. Consequently the already flattened curvature resulting from lying on the operating table is still unsupported, and so the back pains are increased.

A fourth contributory factor is a mattress which is too soft in texture; this gives too easily, causing dents and so contributes to the flattening.

Two types of women are prone to such post-operative backache—the very stout and the asthenic flabby type. In the former the lumbar muscles are permanently strained in balancing the heavy abdominal weight. These women always have an increase of the lumbar curvature, and during the operation the already overtired lumbar muscles readily give way. The second type have muscles and ligaments constitutionally weak. The intervertebral ligaments are very loose and the spine curvature relaxes easily.

These unpleasant backaches can be prevented by a very simple procedure: (1) During the operation a cushion, not too soft, should always be placed under the lumbar curvature to prevent flattening of that part of the spine. (2) When the patient is changed from the lithotomy to the normal position both legs should be stretched gently at the same time. (3) Nurses should be taught never to allow the lumbar region to be unsupported while the patient is lying on her back, and especially during the first few days after the operation. An ordinary and not too soft pillow

should always support the lumbar region and should be rearranged several times during the day; and the mattress should not be too soft.

Should backache occur in spite of these precautions, a tight strapping of the lumbo-sacral region usually gives relief in a short time.

It is extraordinary, however, how difficult it has proved to get these simple precautionary measures introduced and carried out by nursing staff. Doubtless this is due to the rigid routine instruction during training; and to get nurses to alter this routine may prove extremely difficult, as I have found. Nevertheless when they have put these measures into practice great suffering has been spared to these patients and their convalescence has been made much easier and swifter.

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Investigations on Long-acting Corticotrophin

Corticotrophin remains in the body for only a short time after administration. Sayers *et al.* (1949) found, in two normal persons, the highest blood concentration at the conclusion of intravenous infusions for a half and one hour respectively, whereas three hours after starting the infusions the corticotrophin level had fallen to the control value.

While the decrease in number of eosinophil leucocytes is accepted as a standard for increased activity of the adrenal glands, it is known that the number of eosinophil

FIG. 1.—Case 1. The effect of six $3\frac{1}{2}$ -I.U. doses of corticotrophin a day compared with that of one dose of 21 I.U. of long-acting corticotrophin of the same batch.

FIG. 2.—Case 2. The effect of six $3\frac{1}{2}$ -I.U. doses of corticotrophin a day compared with that of one dose of 21 I.U. of long-acting corticotrophin of the same batch.

leucocytes in the blood does not decrease after a single intravenous injection of corticotrophin (Renold *et al.*, 1952). One intramuscular injection daily, given on three consecutive days, does not stimulate the adrenal cortex as measured by the excretion of 17-ketosteroids in the urine (Querido *et al.*, 1951). The daily therapeutic dose of corticotrophin must therefore be subdivided. This is inconvenient for the patient as well as for the nursing personnel, and consequently a search has been made for an A.C.T.H. preparation which will be effective when injected only once daily. The preparations described below seem to meet these requirements.

Methods.—Using the method described by Goslings *et al.* (1953), we gave six $3\frac{1}{2}$ -I.U. doses of the Organon preparation C/41 daily to two male patients suffering from rheumatoid arthritis. The results were compared with those from one 21-I.U. dose of the Organon long-acting (CLA) preparation of the same batch. In the intervals the patients were given dummy injections. The 17-ketosteroids excreted in the urine in 24 hours were assayed according to the method of Kassenaar *et al.* (1950). Eosinophil leucocyte readings were taken every morning at the same time, before breakfast and previous to the first injection, and the cells were stained according to the method of Zollikofer (1901).

Results.—The eosinophil leucocytes showed a distinct decrease during injection of the normal preparation (C), and also during that of the long-acting preparation (CLA) (Figs. 1 and 2). Both C and CLA had a marked effect on the excretion of 17-ketosteroids in the 24-hour urine. In Case 1 (Fig. 1) these values were of the same order of magnitude; in Case 2 (Fig. 2) the excretion was about 80% more during the CLA-period than during the period in which the normal preparation was given.

DISCUSSION

From the criteria of Goslings *et al.* (1953) it may be concluded that CLA has a satisfactory action. This is in accordance with the clinical results obtained by us, and by others (Solem and Holterman, 1952) with zinc-protamine preparations. It is not intended to discuss the validity or otherwise of the Sayers test for corticotrophic preparations. It is important, however, to remember that this test requires intravenous injections, and that only the immediate effect is measured. The long-acting preparations do not lend themselves to intravenous injection, and their effect is spread out over a longer period. It does not seem correct, therefore, to express the strength of a CLA preparation in Sayers units of the basic material from which these preparations are made. Furthermore, it is possible that in preparing CLA some change in the activity occurs.

In order to obtain reliable data on long-acting preparations for clinical use it seems necessary to compare these preparations with ordinary preparations of the same batch, based on the excretion of 17-ketosteroids in the urine in men.

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