OF PH CHROMOSOME

Sir,—I should like to venture a different explanation from that of Dr. Mastrangelo and Dr. Zuelzer (Dec. 3, p. 1250) on the origin of the Ph chromosome. As I have pointed out, it is in my opinion a general rule that absence of some particular inhibitor causes disintegration of corresponding genes—located in the "upper" part of chromosome no. 21 in chronic granulocytic leukaemia. It is not incomprehensible that loss of one of the combination of inhibitor, enzyme-systems, and genes, should affect the remaining ones.

Judging from what persists after the Ph chromosome has been formed, the normal one may consist of "upper" and "lower" curved structures, which are interlinked as shown in the accompanying diagram. Disintegration of some special gene—that is, of a number of nucleotides—may well spread through the entire chemical spiral, resulting in loss of the "upper" curve, thus forming the Ph chromosome. At any rate, disintegration of a number of nucleotides would cause a break in the "upper" curve, leaving two parts of it unattached which may or may not translocate.

Gorinchem, The Netherlands.

N. H. D. SCHÖYER.

MYCOPLASMA AND DOWN'S SYNDROME

Sir,—Epidemiological studies assuming an infectious aetiology of Down's syndrome have led to contradictory opinions, and therefore the investigations of Dr. Allison and his colleagues are of great interest. We have worked on the same problem, and we give here unpublished findings which are in accordance with their results.

In our in-vitro experiments we infected human diploid lung cells (IRV strain) with Mycoplasma hominis. Analysis of 400 cells from control cultures and 265 cells from infected cultures between the 19th and the 32nd passages did not result in a significant increase in numerical or structural chromosomal aberrations. There was also no increase in polyploidy. We did not find a consistent loss of chromatin material of the short arm of chromosomes 21 and 22 in cells of infected cultures. Variation in size of the short arms may occur in the karyotypes of both inoculated and control cultures. Moreover the chromosomal aberrations found by Fogh et al. were based on experiments with a cell-line in which the chromosome complement is known to be abnormal at the beginning of the experiment. It is even possible that an existing aneuploidy may change into a normal diploid pattern, as we have observed in a patient with melanoma after treatment with antimitic drugs (particularly nitrogen mustard). In our further experiments in which the action of cytotoxic drugs on the chromosomes of cells was studied in vitro as well as in vivo, it seemed to be easier to induce chromosome changes in cells in vitro.
VITAMIN-B12 DEFICIENCY IN PSYCHIATRY

Sir,—May we add a few belated comments to the controversy regarding vitamin-B12 deficiency and psychiatry, which followed the publication of the paper by Dr. Henderson and his colleagues on the antigastric-antibody (A.G.A.) test as a screening procedure. We endorse the views of Mr. Hansen and his co-workers and Dr. Reynolds and Dr. Matthews that the A.G.A. test must not lead to neglect of search for causes of vitamin-B12 deficiency other than addisonian pernicious anaemia. This is borne out by our own findings in the rhesus monkey fed on vegetarian diets: such animals quickly develop low levels of vitamin B12 in their serum and degenerative lesions in the nervous system similar to those found in human vitamin-B12 deficiency soon become apparent—on one occasion within 8 months. Such lesions are easily recognised histologically in the peripheral nerves, spinal cord, and occasionally without previous detectable neurological signs in life. Furthermore, when normal animals are compared with vitamin-B12-deficient animals, changes in the peripheral blood are not found, although our recent unpublished findings show that, when individual animals are followed, "longitudinally" before and after treatment, minor but statistically significant changes, particularly in the mean corpuscular volume, can be demonstrated. Dr. Varnavas and his co-workers stated that inspection of blood-films is an adequate screening procedure is certainly not confirmed by our studies; in this respect we agree with Reynolds and Matthews and Dr. Schrumpf. We have now extended our observations to other species of monkey and are forced to conclude that at least some neurobiological research (past, present, or future) on such animals maintained on traditional vegetarian diets is suspect. We also believe our findings to be relevant to the human situation.

We do not understand the comment of Mr. Hansen and his colleagues to the effect that the significance of vitamin-B12 deficiency in psychiatry is conjectural. An early clinical sign of the deficiency is an altered e.e.g. pattern, and recently the psychiatric significance has been expressed cogently in this journal. The results of the behaviour of rhesus monkeys in captivity on vegetarian diets (e.g., their apparent aggressive and morose personalities) may be associated at least in part with deficiency of the vitamin—here the appropriate psychiatric manifestations, the situation as a whole is not irrelevant.

G. F. de Vries
A. A. Vogelzang.

THE PLACE OF THE PRIMARY PHYSICIAN

Sir,—Dr. McWhinney is undoubtedly right when he states in his article last week (p. 91) that primary medical care should be carried on by the general practitioner with his focus at the hospital. It is unfortunate that present trends appear to be in the opposite direction. Local authorities, backed it seems by Ministry of Health policy, are encouraging him to throw in his lot with them and to practise from scattered premises, built by them for the purpose, in association with ancillaries, who are not under his direct control, and whose crumbs of help are only available to him in so far as they are not thought to be needed at the table of the local health authority. Laboratory and radiological help, essential though these are for primary medical assessment, will not be available at these points, and the pen-and-stethoscope era of the past will be perpetuated. There is nothing like bricks and mortar to keep in being obsolete practice, and it is sincerely to be hoped that Dr. McWhinney's peremptory article will do something to reverse the present tendency.

R. W. NEWMARK.

A CHILDREN'S WARD IN THE TROPICS

Sir,—It is relevant to compare the figures of Dr. Lawless and his co-authors with those reported from paediatric wards in other parts of Africa, particularly in relation to the number of beds available to the population. Musoke published data from Mulago hospital, where 50 beds were available for Kampala (population about 45,000) and environs. In the first year after independence in the Congo Yarom and I published data from Luluabourg hospital, where 150 beds were available for the town of 50,000 and environs. The figures of Dr. Lawless and his co-authors are for about 75 beds for a population of more than 114,000. The beds/population ratios are therefore Luluabourg > Kampala > Kitwe, and mortalities of major disease-groups, as percentages of admissions, may be considered in that order, as follows:

<table>
<thead>
<tr>
<th>Disease-group</th>
<th>Luluabourg</th>
<th>Kampala</th>
<th>Kitwe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiratory</td>
<td>10</td>
<td>17</td>
<td>24</td>
</tr>
<tr>
<td>Gastroenteric</td>
<td>7</td>
<td>15</td>
<td>16</td>
</tr>
<tr>
<td>Malnutrition</td>
<td>13</td>
<td>20</td>
<td>40</td>
</tr>
<tr>
<td>Malaria</td>
<td>6</td>
<td>13</td>
<td>10</td>
</tr>
<tr>
<td>Overall</td>
<td>10</td>
<td>17</td>
<td>14</td>
</tr>
</tbody>
</table>

It will be seen that for each major disease-group (excepting malaria, which is limited to one season at Kitwe) the mortality is lower where more beds are available. The overall mortality departs from this sequence because of the different incidences of the diseases: if admissions for malnutrition and malaria are