et al.¹ Twenty suitably spread metaphases were counted. Nineteen had 46 chromosomes, one had 47 chromosomes. Detailed analysis of six metaphase plates revealed no abnormalities.

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CHROMOSOME PATTERN IN MYELOID LEUKÄMIA IN A CHILD

Sir,—Through the kindness of Dr. Beryl Corner, we have had the opportunity of investigating the chromosome pattern in a female child, aged 2½ years, whose illness had been diagnosed as myeloid leukaemia.

We are indebted to Dr. Alan Raper for the original report on the blood:

"White cells 90,000, polymorphs 35,000 per c.mm. 12% of the nucleated cells were blasts; the rest of the maturation in the granulocyte series was normal. Platelets 1-28 million, large. Fairly numerous megakaryocyte nuclei were present in the blood. Normoblasts in the erythrocyte series was normal. Platelets 1-28 million, large. Fairly numerous nucleated cells were blasts; the rest of the maturation in the granulocyte series was normal.巨核细胞核存在于血液中：Hemooglobin 52%.”

Ph1 chromosome, this seems to be the first time it has been reported in myeloid leukaemia in a child. The youngest case of chronic myeloid leukaemia containing the Ph1 chromosome which we can trace is a girl aged 14, recorded by Tough et al.⁴

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MATERNAL RADIATION AND MONGOLISM

Sir,—Uchida and Curtis ⁸ report a possible association between mongolism and a history of maternal radiation. Between 1948 and 1954 the potential genetic effects of the Hiroshima and Nagasaki atomic bombs were closely studied. 76,626 infants were examined shortly after birth, and of these, 21,788 had a second examination about nine months later.⁷⁻⁹

Though, for a variety of reasons, mongolism might have escaped detection in the single examination shortly after birth, at the second examination, under much more favourable circumstances and after nine months' observation, a much greater diagnostic accuracy could be achieved. We shall base our remarks on the results of that second examination.

The accompanying table relates mongolism to maternal radiation history (fathers not exposed). The term "exposed" means merely ¹⁰ present in the city at the time of the bombings ¹⁰, and so covers a range of doses from zero to the maximum compatible with survival. The problem of assigning individual doses has so far proved insurmountable. However, from further data ² on the exposures in Hiroshima and Nagasaki, and the subclassification of the exposed (see section 4.9 and table 8.14), we can estimate very roughly a mean whole-body dose among the exposed mothers of 36 rep, with the true mean apt to lie between 26 and 45. Introducing a factor of 0.8 for the (probably maximum) attenuation of the gonad dose due to the superimposed tissues, the estimated mean gonad dose becomes 29 rep. The accompanying table shows no significant association of mongolism with maternal exposure; moreover, the deviation, such as it is, is actually in the direction of an excess among the unexposed.

The occurrence of mongolism in relation to maternal radiation history (fathers not exposed)

<table>
<thead>
<tr>
<th></th>
<th>Not exposed</th>
<th>Exposed</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal child</td>
<td>9440</td>
<td>5579</td>
<td>15,019</td>
</tr>
<tr>
<td>Mongolian idiot</td>
<td>12</td>
<td>3</td>
<td>15</td>
</tr>
</tbody>
</table>

Frequency per 1000  

<table>
<thead>
<tr>
<th></th>
<th>9452</th>
<th>5552</th>
<th>15,034</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1-27</td>
<td>0-54</td>
<td>1-00</td>
</tr>
</tbody>
</table>

As reported previously, the exposed mothers are on ¹. Moorhead, P. S., Nowell, P. C., Mellman, W. J., Battips, D. M., Hungerford, D. A. Exp. cell. Res. 1960, 20, 613.


the average approximately half a year older than the unexposed, a circumstance that should if anything bias the observations towards an excess among the children of the exposed.

Uchida and Curtis estimate that the risk of mongolism in the children of "treated" mothers is approximately four times as great as in the children of control mothers, with the 95% confidence limits for this estimate being 2 and 9. By "treated" they refer to "four or more exposures or fluoroscopy or both". An "exposure" is defined as an X-ray examination of the gastrointestinal tract, urogenital tract, lumbar spine, or film of abdomen during pregnancy, and apparently refers to the series of films that accompanies such an examination. The task of approximating the exposure to radiation is complicated by the fact that in their table 11, which describes "areas irradiated in fluoroscopic examinations. The task of

The roughness of these dose calculations will be apparent to every radiobiologist. It seems doubtful, however, whether future refinements in the evaluation of gonad dosage in either series can possibly obscure the fact of a major discrepancy between the observations of Uchida and Curtis and of ourselves.

W. J. SCHULL
J. V. NEEL.

"MONGOLIAN BLUE SPOTS"

Str,—Dr. Wallis (Jan. 20) refers to these patches of pigmentation. These "spots" or areas usually on the lumbar or sacral regions are also found in Canadian Indians and Eskimos. We call them "Mongolian tache" and have presumed that they indicate racial affinity and origin of our aboriginal races.

W. J. WOOD.