but this ignores the fact that hydromic changes may be secondary, and that a hydatidiform mole can be retained for long periods without discharge, and also without any cellular reaction.

Dr. Hellmann may deserve gratitude for re-emphasising the possible role of immune reactions in spontaneous abortion, but much more evidence will be needed before this can be considered as the main action of thalidomide.

Department of Pathology, Guy's Hospital Medical School, London S.E.1.

TIMOTHY CHARD.

CERVICAL SPONDYLITIS AND VERTIGO

SIR,—I have read with considerable interest the letter from Dr. Hargrave-Wilson and Dr. Sherrey (June 4). In recent lectures to general practitioners on a course of instruction organised by this association, Professor Jack Joseph has stated that nipping of the vertebral artery on head rotation is practically impossible without gross arthritic bony changes at the atlanto-axial joints. Obviously the point Dr. Hargrave-Wilson and Dr. Sherrey raise requires elucidation, and it seems that only vertebral angiography will answer the question whether arterial occlusion or cervical sympathetic irritation produces the vertigo associated with cervical spondylitis. We are pleased to have their confirmation that, as we have been teaching our postgraduate students, cervical manipulation relieves the symptoms in many of these cases.

JOHN EBBETTS
Honorary Secretary, British Association of Manipulative Medicine.

WARM KNEES AND COLD FEET

SIR,—I have been frequently assailed by visitors from England about the failure of many American investigators to cite European published work. I have noticed, however, that the reverse of this has been becoming an increasingly frequent occurrence in the articles published in your journal. May I therefore take the liberty of enclosing a reprint of an article from our laboratory which covers the topic of an article by Mr. Gaylis (April 9). The article cites no references, while it is essentially impossible without gross arthritic bony changes at the atlanto-axial joints. Obviously the point Dr. Hargrave-Wilson and Dr. Sherrey raise requires elucidation, and it seems that only vertebral angiography will answer the question whether arterial occlusion or cervical sympathetic irritation produces the vertigo associated with cervical spondylitis. We are pleased to have their confirmation that, as we have been teaching our postgraduate students, cervical manipulation relieves the symptoms in many of these cases.

K. HELLMANN.

JAMES CONWAY.
my article. I hope that your correspondent will accept this explanation for the omission of this reference in my paper.

Dr. Zweifler makes the point that 3 of his patients with hot knees who were further investigated by arteriography or surgery revealed lower popliteal-artery occlusions, and it might be inferred from this that reconstructive surgery is thus not possible. My own experience, however, suggests that this may not be the case. In 7 of my patients, in whom the sign was "strongly positive", the distal segment of the popliteal or origin of either posterior or anterior tibial arteries was patent, thus making direct arterial surgery feasible. In fact, this was done in 5 patients with immediate failure in 1.

Warm zones are not only confined to the knee, but may be found on the antero-medial aspect of the thigh in the presence of a short segmental adductor hiatus occlusion. The zone of increased warmth is not as pronounced as that found around the knee because the collaterals are situated on a deeper plane.

I hope that my short article, while obviously not "new", will help to evaluate this easily detectable clinical sign.

Department of Surgery,
Medical School,
University of the Witwatersrand, Johannesburg.
H. GAYLIS.

PHYTOHÆMAGGLUTININ AND THYMIC LYMPHOCYTES

SIR,—In suggesting that thymus cells respond to phytohaemagglutinin (P.H.A.) differently from lymphocytes from blood or lymph-gland, Dr. McIntyre and Mr. Segel (June 4) refer to our article in which we described the technique of leucocyte cultures obtained from thymus and spleen post mortem. The purpose of our article was the establishment of a method and of the practicability of this method for obtaining metaphase preparations for karyotyping; we were not primarily concerned with the role of P.H.A. Although it was not mentioned, we had in fact carried out controls without P.H.A. and found that after 72 hours' incubation there was no wave of mitosis. Cultures incubated for 7 days without P.H.A., while sometimes yielding a few cells in mitoses, did not yield the number of mitoses required for karyotyping. We doubt the relevance of a comparison between observations based on the culture of thymus taken post mortem from the newborn with those obtained from cultures of the involuting thymus of older subjects.

A. D. BAIN
I. K. GAULD.

RIB ABSENCE IN DOWN'S SYNDROME

SIR,—Dr. Beber has postulated that in some patients with Down's syndrome there may be a developmental error of the 12th thoracic vertebra due to failure of the appropriate sclerotome to form. He based this hypothesis on a report of 2 boys and 9 girls, among 36 patients who had 11 instead of 12 ribs. Dr. Thuline and Dr. Islam (May 21) have surveyed 251 patients and found an excess of the missing-rib anomaly among female patients (29 compared with 21 males).

We have examined penetrated chest X-rays of 162 patients: 91 males (age-range 8-60 years), and 71 females (age-range 7-54 years). The distribution of rib anomalies was as follows:

<table>
<thead>
<tr>
<th>Rib anomaly</th>
<th>Males</th>
<th>Females</th>
<th>Combined</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal number of ribs and thoracic vertebrae</td>
<td>85</td>
<td>47</td>
<td>132</td>
</tr>
<tr>
<td>12th rib absent on right side only</td>
<td>0</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>12th rib absent on left side only</td>
<td>0</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Both 12th ribs absent but 12th thoracic vertebrae present</td>
<td>0</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Both 12th ribs absent (11 thoracic vertebrae only)</td>
<td>4</td>
<td>16</td>
<td>20</td>
</tr>
<tr>
<td>Totals</td>
<td>91</td>
<td>71</td>
<td>162</td>
</tr>
</tbody>
</table>

All but 8 of the patients had a regular 21-trisomy anomaly. Details of the 8 patients with irregular chromosome anomalies were as follows:


These observations confirm Dr. Thuline and Dr. Islam's finding of a significant increase in the number of females showing the absent-rib defect compared with males. The sex difference for absence of ribs or for absence of the 12th thoracic vertebra is significant beyond the 0.01 level of confidence on a $\chi^2$ test with one degree of freedom. Absence of the 12th thoracic vertebra associated with bilateral absence of the 12th rib conforms with Dr. Beber's suggestion that this defect may be the result of an absent sclerotome.

J. B. MURRAY
P. E. SYLVESTER
J. GIBSON.

YY SYNDROME WITH MULTIPLE MALFORMATIONS

SIR,—Two Y chromosomes have been found in males with high stature, high-grade mental deficiency or below-average intelligence, and aggressive behaviour by Dr. Price and his colleagues (March 12). No consistent physical features or characteristic malformations have been seen in XYY individuals reported so far. Among these the patient of Hustinx and

Metaphase chromosomes of leucocyte stimulated by phytohaemagglutinin, showing asynchronous replication of the two Y chromosomes after incorporation of $^3$H-thymidine (a), and with silver grains removed (b). Large arrow-heads point to Y stalked arrows to G0, and small arrow-heads to G1 chromosomes.