non-immune rosette formation are the facts that a relatively large proportion of lymphocytes of unimmunized animals participate in the reaction, and that thiocytes are more active than non-thymic lymphocytes.

The proportion of human lymphocytes which adhere to sheep red cells is often relatively large in non-immunized human subjects, and human fetal thiocytes are more active than peripheral lymphocytes. The adherence of non-immunized human lymphocytes to sheep red cells is therefore likely to occur through non-immune rather than immunological mechanisms. The adherence probably occurs through fortuitous cross-reactivity of sheep red cells with human lymphocyte surface receptors concerned with an autologous non-immune adherence. —I am, etc.,

ISRAEL SIGEL
The Roosevelt Hospital, New York, N.Y.

[Footnotes]
3 Siegel, L., Cellular Immunology, in press.
5 Siegel, L., and Sherman, W. B., Journal of Allergy and Clinical Immunology, 1972, 50, 105.

Major Accident Teams

SIR,—To my surprise the one member of the consultant staff not included in Mr. P. E. A. Savage’s major accident action card (I, July, p. 42) is the ophthalmologist. Some 15 years ago an explosion in a coal mine resulted in about 20 patients being admitted to the Victoria Hospital, Burnley, where, thanks to the prescience of the orthopaedic surgeon, a major accident procedure had been instituted. Every one of these patients had eye injuries. —I am, etc.,

K. R. BROWN
Matua, G.C.

Activated Charcoal in Tricyclic Drug Overdoses

SIR,—The letter by Dr. J. L. Crammer and Dr. B. M. Davies (26 August, p. 527) calls for comment. It is stated, without reference, that tricyclic drugs undergo enterohepatic circulation and that “large amounts are sequestered into the bile and delivered into the duodenum.” The importance of being certain that “large amounts” of the active drug are excreted in the bile lies in the fact that if such secretion did occur then there would be a temptation to undertake biliary drain- age as an emergency measure in the management of acute tricyclic poisoning.

At one time biliary drainage was considered an acceptable measure in severe acute glutethimide (Doriden) overdose1 on the assumption, since discounted, that substantial enterohepatic circulation of the active drug occurred. Other heroic measures in tricyclic poisoning included gastrostomy undertaken by French toxicologists with no operative mortality but a death rate of 50% in 16 patients.2 The procedure has understandably been discontinued.

Dr. Crammer and Davies also make an inaccurate statement about the effect of activated charcoal on aspirin ingestion. They state “activated charcoal was shown to prevent the absorption of aspirin from the human gut.” As your leading article in the same issue (p. 487) points out, activated charcoal does no more than reduce absorption of salicylate, the degree of reduction depending on saponification of the drug. It has never been claimed that prevention of absorption will be achieved. —I am, etc.,

HENRY MATTHEW
Regional Poisoning Treatment Centre, Royal Infirmary, Edinburgh

—The communication of Dr. J. L. Crammer and Dr. B. M. Davies (26 August, p. 527), which was brought to our attention only in October, has prompted us to submit some preliminary results obtained by us.

Early this year we considered activated charcoal as a means of intercepting the enterohepatic circulation of imipramine and its desipramine metabolites. We cote measured the parent and metabolite concentrations in blood and urine and found that the ratio of imipramine to desipramine in blood and urine varied with the dose of imipramine administered. The parent and metabolite concentrations in blood and urine following the ingestion of imipramine and desipramine are shown in the Table.

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<thead>
<tr>
<th></th>
<th>Intraprofessional Infusion</th>
<th>Intraprofessional Infusion</th>
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<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>Heart</td>
<td>0.54</td>
<td>0.90</td>
</tr>
<tr>
<td>Liver</td>
<td>0.60</td>
<td>0.94</td>
</tr>
<tr>
<td>Lungs</td>
<td>0.72</td>
<td>0.98</td>
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</table>

*Significant at the 0.05 level.

Even if binding is not quantitative and irreversible the resulting levelling off of the imipramine load on the target organs may improve the prospects of patients with imipramine poisoning. On the basis of these preliminary results the National Poison Control Centre in the Netherlands now stresses the use of activated charcoal even in cases where absorption of the tricyclic anti-

depressant dose may well be complete before therapy is started. —We are, etc.,

A. G. RAUWS
J. VAN NOORDWIJK
National Institute of Public Health, Bilthoven, the Netherlands

2 Maes, R., 1972, personal communication.

Hormones in the Treatment of Psychoses

SIR,—I believe the neuropsychological matrix of tension and depression is a central functional and organizational scheme related to the circulatory and endocrine systems. I am, etc.

W. BUJANOV
Vyrobl Mental Dep.-sensat
Lesnograd, U.S.S.R.

Spironolactone and Ammonium and Potassium Chloride

SIR,—In a programme of intensive drug monitoring we have found a possible interaction between spironolactone, ammonium chloride, and potassium chloride.

The patient, a 58-year-old woman with paralysis due to a compression fracture of the D 8 and 9 vertebrae and extradural compression of the cord, required an indwelling catheter and urinary antiseptics. Treatment with digoxin and frusemide for mild congestive heart failure was continued after admission, and potassium supplements were given as potassium chloride (about 50 mEq/day). The plasma potassium fell slowly to 2-7 mEq/l. six days after admission. Frusemide was discontinued and spironolactone, 25 mg four times a day, substituted. The potassium chloride was continued, and a week later ammonium chloride 4 g/day together with methenamine mandelate was started.

At the beginning of spironolactone treatment plasma sodium was 140 mEq/l, plasma potassium 4-1 mEq/l, plasma CO2 content 28 mEq/l, and blood urea 28 mg/100 ml. Twenty days after beginning ammonium chloride the patient’s condition deteriorated and she appeared acidoatc. All drugs were stopped and the plasma sodium was 120 mEq/l, plasma potassium 5-7 mEq/l, plasma CO2 content 13 mEq/l, blood urea 24 mg/100 ml, plasma