

reactions and which continue to cause trouble when used or are those drugs which are widely used.

A total of 163 different drugs and chemicals were associated with the 138 cases reported to the Registry during the period in review.

A.—*Ninety-eight drugs* were associated with one case each. Of these, only imipramine hydrochloride (Tofranil) requires special mention. This drug was introduced, in 1959, for the treatment of depression. Since that time, it has been reported as a possible causative agent in 9 cases of leukopenia, 2 of which were fatal. However, only one additional case has been reported in the first 6 months of 1961.

B.—*Thirty-one drugs* were associated with 2 cases each. The potentially toxic effect of quinidine (Asarum, Conchicine, Conquinine, Pitayine, Quindate) on platelets is emphasized by the fact that 2 patients developed thrombocytopenia after the administration of quinidine, the only drug used.

C.—*Twelve drugs* were associated with 3 cases each. Dexamethasone (Decadron, Deronil, Gammacorten), a synthetic analogue of hydrocortisone, was reported to be associated with 2 cases of pancytopenia and 1 case of leukopenia. This drug is mentioned because it had not previously been associated with the development of blood dyscrasias. However, in all 3 cases, other drugs known to be potentially toxic were administered concurrently; thus, it seems dubious that dexamethasone was the offending agent.

D.—*Eight drugs* were associated with 4 cases each. A definite cause-effect relationship could not be established in any of these cases because of the variety of blood disorders induced and the many other drugs used concomitantly.

E.—*Fourteen drugs* were associated with 5 or more cases each:

- Acetophenetidin (Phenacetin)—8 cases
- Acetylsalicylic Acid (Aspirin)—15 cases
- Chloramphenicol (Chloromycetin)—56 cases
- Chlorothiazide (Diuril)—7 cases
- Chlorpromazine (Thorazine)—11 cases
- Diphenhydramine (Benadryl)—6 cases
- Diphenylhydantoin Sodium (Dilantin Sodium)—5 cases
- Meprobamate (Equanil, Meprospan, Mepro tabs, Miltown)—7 cases
- Novobiocin (Albamycin, Cathomycin)—5 cases
- Penicillins—17 cases
- Phenobarbital (Luminal)—10 cases
- Promazine (Sparine)—5 cases
- Sulfisoxazole (Gantrisin)—6 cases
- Tetracycline (Achromycin, Panmycin, Polycycline, Tetracycln)—18 cases

As in previous tabulations, the drug associated with the highest number of blood dyscrasias in this period is chloramphenicol. It was the only drug administered in 23 of the 56 new cases reported to be associated with the use of chloramphenicol; in 28 of the remaining 33 cases, it had been employed in conjunction with drugs not known to cause blood dyscrasias. These results support the contention that chloramphenicol has a definitely toxic action on the bone marrow; therefore, it is mandatory for the physician to be aware of the potential toxicity of this otherwise valuable antibiotic.

The drugs associated with the next highest number of blood dyscrasias are the tetracyclines and penicillins. In none of the reported cases was one of these antibiotics used as the only drug; in most of the cases they were used in conjunction with drugs known to have toxic potentialities. It is quite possible that the penicillins and tetracyclines have been listed frequently because they have been used in the treatment of early symptoms of illnesses which were later recognized as blood diseases.

Acetylsalicylic acid was reported to have been given to 15 patients who developed blood dyscrasias. This is probably a gross underestimate, since acetylsalicylic acid in some form is used so extensively that it is fair to assume that the great majority of all patients with blood dyscrasias have been exposed to this drug. However, it has been used so long and with such impunity that it seems unlikely that this drug has hidden hematotoxic properties. The same may be true in the case of phenobarbital, a widely used sedative.

The remaining drugs, with the possible exception of novobiocin, are all recognized as having potentially hematotoxic side effects; they should be used only with full awareness of this potential danger. As a guide, the members of the Study Group have listed a number of drugs which, in their opinion, have been