PHARMACOPOEIAS AND FORMULARIES

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THE rapidity with which new substances are introduced into therapeutics has imposed a colossal task on the compilers of the New Drug Developments volume of the U.S.D., which contains monographs on 209 substances developed since the publication of the 25th Edition five years ago. This spate of new drugs also makes it essential for critical physicians and pharmacists to have access to reliable information on which to assess the merits or demerits of the drugs. The U.S.D. supplies this information together with references to reports of original work, from which statements have been abstracted, or where fuller details of methods of chemical synthesis, pharmacological properties, toxicity, therapeutic uses and side-effects may be found. Discoveries in chemistry, pharmacology and therapeutics have no national boundaries outside the iron-curtain; it is suggested that kanamycin which was discovered in Tokyo in 1957 and marketed in the United States in 1958 established some sort of a record for haste in international transmission from new laboratory discovery to available bedside treatment. Work in the Chester Beatty Research Institute in London led to the development of chlorambucil, a cytotoxic agent better tolerated and better absorbed than triethylene melamine. Chemical constitution is discussed with reference to that of analagous compounds, and attention is called to structure-action relationships. The enhanced pharmacological activity resulting from the introduction of fluorine into molecular structures is discussed for a number of compounds such as the corticosteroids, phenothiazine derivatives, saluretic agents and fluoxymesterone.

Antibiotics account for many of the additions and are discussed collectively, as well as individually under their generic names. The advantages and disadvantages of using corticosteroids simultaneously with antibiotics are clearly expounded; antibiolymphins—salts of antibiotics with polysaccharides or certain polycarboxylic acids—which have increased affinity for the lymphatic system, and methods which have been suggested for increasing blood-levels of tetracycline after oral administration are described. Varying opinions about the desirability of using antibiotics routinely for prophylaxis are reviewed. The importance of pH control in the assay of the antifungal activity of the amphotericins, the limitations of colorimetric methods of assay for oleandomycin, erythromycin and carbomycin and the numerous independent "discoveries" which led to the assignment of nine different names to the antibiotic now known as novobiocin are among the many other details to be found in this extensive survey.

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A review of the theories which have been advanced to explain the mode of action of hypoglycaemic sulphonylureas and biguanides; the pharmacology of spironolactone, a 17-spirolactosteroid which blocks the sodium-retaining action of aldosterone on the distal convoluted renal tubule, but which requires more extensive clinical study before its usefulness can be evaluated, and the specific anti-emetic action of trimethobenzamide hydrochloride are further examples of the information to be found here.

The use of enzymes in therapeutics is illustrated by desoxyribonuclease (pancreatic dornase) employed by aerosol inhalation to reduce the tenacity of pulmonary secretions, fibrinolysin given by intravenous injection to dissolve vascular clots in thrombophlebitis, and chymotrypsin used to promote the absorbtion of oedema fluid and blood in inflamed or traumatised areas. Uricosuric properties are possessed by sulfinpyrazone, the sulphoxide metabolite of an analogue of phenylbutazone and by zoxazolamine which also relieves spasm of skeletal muscle by an action resembling that of mephenesin. Antihypertensive drugs include trimethidinium methosulphate, syrosingopine and mecamylamine hydrochloride. Among the new psychotherapeutic compounds are imipramine hydrochloride, methaminodiazepoxide hydrochloride and β-phenylisopropylhydrazine hydrochloride.

Chemical compounds used as aids to diagnosis are mentioned with appropriate details of technique. There is a description of the use of radio-iodinated serum albumin for the determination of blood-volume, plasma-volume, blood circulation time and cardiac output and for the detection and localisation of brain tumours. A rapid simple *in vitro* test for estimating thyroid function measures the uptake of ^{131}I-labelled liothyronine by a sample of the patient's blood. Azuresin, a dye coupled with a carbacrylic cationic exchange resin is used in the tubeless analysis procedure for the detection of achlorhydria and is better for this purpose than quinine carbacrylic resin. Bunamiodyl, a derivative of acrylic acid, is rapidly absorbed after oral administration and concentrated in the gall-bladder. It is used as a radio-opaque cholecystographic medium and, as the drug is excreted by the kidneys, intestinal opacities do not obscure the gall-bladder shadow.

Oxethazaine is a local anaesthetic used for the relief of gastritis; proparacaine hydrochloride is a surface anaesthetic for use in ophthalmic surgery and metabutoxycaine hydrochloride a local anaesthetic for use in dental surgery.

Drugs still in the stage of clinical investigation are not excluded but the available evidence concerning them is reviewed. This is a remarkably informative publication.