A BRIEF REVIEW OF PROGRESS IN PHARMACY.*

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Since the introduction of antipyrine in 1882, the therapeutic field has been flooded with thousands of new remedies, of which perhaps less than one per cent. are really valuable and necessary additions. The succeeding years have brought in the following important drugs: 1885, Urethane; 1886, Sulphonal; 1887, Acetanilide and Phenacetin; 1890, Trional; 1899, Aspirin; 1904, Stovaine; 1905, Novocaine. Tuberculin was introduced in 1890. Diphtheria Serum in 1892. A moment's consideration shows that the rapid and enormous multiplication of possible remedial agents has been in one sense a positive detriment to progress, because it has turned the attention of physicians from a limited number of drugs, chiefly vegetable or inorganic and inexpensive, to a legion of new drugs, largely chemical, complex in composition, and expensive to the point of extortion.

A glance through current literature might give the impression that these new synthetics represent recent progress in pharmacy. But a closer study of the subject reveals a very different state of things. The modern physician takes a wider view in his search for remedial agents. He ransacks the whole realm of nature in choosing his armamentarium, using a gas from the atmosphere, an obscure animal gland, a physical force such as electricity, a vegetable ferment, or an emanation from an element like radium, with the same naturalness as when he formerly prescribed the common drugs of the vegetable, mineral and animal kingdoms. For this reason the commentator on modern pharmacy must not limit his attention and interest to the commonly accepted drugs in the materia medica. In attempting a brief review of recent progress in pharmacy it will, therefore, be proper to refer to therapeutic applications and methods, rather than give detailed notes on a few selected remedial agents.

Lactic Ferments are used largely, not only for making buttermilk, but in the treatment of intestinal troubles, rheumatoid arthritis and exphthalmic goitre. They have been used with some success in gonorrhea, dysentery, diarrhea, constipation and a number of other troubles. In fact, they have been *tried* in a more or less empirical way for almost every conceivable disease, including hay fever.

Carbon Dioxide Snow has been introduced as a cauterant. When applied in the form of a pencil to naevi, warts, lupus, etc., it completely destroys the growth, usually in a single application. The process is simple and practically painless. It has been proposed to call this method of treatment crymotherapy, from the Greek word, krymos, Frost.

"606" *or Salvarsan* now seems likely to yield place to the improved form "Neo-Salvarsan," which will soon be on the market. It is stated to be easily soluble in water, forming a neutral solution to which the addition of caustic soda is unnecessary. The dose is larger, 0.9 gm. of Neo-Salvarsan being equal to 0.6 of Salvarsan. It is given by intravenous or intramuscular injection, preferably the for-

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mer. Up to March 30, one physician in Germany had tried the new drug on 269 patients with greater toleration than with Salvarsan.

Combretum, the plant so much vaunted a few years ago for the treatment of the opium habit, appears to have lost favor. It is probable that it merely served as a vehicle for the diminishing doses of morphine that were used in the treatment.

Collodion has recently been applied most successfully to the treatment of boils. A ring of collodion is painted around the boil, and the application repeated several times a day. This procedure has been found to exert a gentle and increasing pressure on the boil, which results in its bursting, the core being squeezed out at the same time.

Hormonal, or peristaltic hormone, is being used in the treatment of constipation. Harmones are the substances which give character to internal seretions, and which, on absorption into the blood, influence tissues and organs other than those from which they have been obtained. Specific hormones of physiological importance have been obtained from the testes, ovary, intestinal epithelium, pancreas, thyroid, suprarenals and pituitary body. Hormonal is an extract of the spleen. It came to be used because it was found that normal intestinal peristalsis is produced by a specific hormone which is stored chiefly in the spleen. The adult dose is 15 to 20 cc, by intramuscular injection.

Mercury Succinimide has been very widely tried in tuberculosis, but it would seem to have failed to justify the high hopes that were entertained as to its usefulness.

Hydrogen Peroxide can be ranked among the most useful drugs in the Pharmacopoeia. It has given good results as an injection in gonorrhea and in peritonitis, for the irrigation of sinuses and septic cavities and as a prophylactic gargle against cerebro-meningitis.

Bismuth Gauze is now largely used in place of iodoform gauze. It is odorless, non-toxic, less irritating, less expensive and more efficient. In packing cavities it remains sweet and odorless for many days. It is prepared by mixing 2 ounces of bismuth subnitrate with the same quantity of glycerin, adding gradually two and one-half pints of warm water, and passing about 20 yards of gauze slowly, about three times, through the emulsion.

Epsom Salt, in doses of 1 drachm, two or three times a day, has been found to be a cure for warts.

Oxygen. The inhalation of this gas is of great service in pneumonia, asthma, bronchitis, angina, phthisis, dyspnoea, and asphyxiation by drowning, by smoke or gas. It is a cardiac and respiratory stimulant.

Ergot. Old ideas as to the active constituents of this valuable drug have undergone considerable modification. A water soluble principle has been isolated ,which has an action allied to the active principle of the adrenal glands. Chemically speaking it is para-hydroxy-phenyl-ethylamine. It is found in putrid meat and in placental extract. It can be produced synthetically. It causes the rise in blood pressure and contraction of the uterine muscles characteristic of ergot. Ergotoxine is responsible for the production of gangrene in the cock's comb. The action of ergot on the uterus has also been ascribed to Ergotidine, beta-iminazoyl-

ethylamine. This substance also has been made by synthesis. It causes a lowering of blood pressure.

Chromium Sulphate has given remarkable results in the treatment of enlarged prostate. Cases have been recorded where the patint was able to dispense altogether with the use of a catheter after taking a course of treatment with this drug administered by the mouth.

Sodium Citrate gives very great relief in gastric pain. It interacts with the free hydrochloric acid of the gastric juice, forming sodium chloride and citric acid, in which medium the activity of the digestive enzymes is encouraged. The dose is 15 to 60 grains, in water. It is a beneficial addition to cow's milk in the feeding of infants, preventing the formation of big curds.

Thiosinamin, a substance obtained by the action of ammonia and alcohol on volatile oil of mustard, has secured a position in the newer materia medica. It has a remarkable action in softening scar tissue and removing strictures. Under the name Fibrolysin it is combined with sodium salicylate, in which form it is largely used. For the treatment of external scars, e. g., those following burns, it is applied in the form of mulls. Internally it is given by injection into the veins, muscles or subcutaneous tissue, or by rectal or vaginal injection. One of its most important applications is in urethral strictures, by electrolysis.

Sera and Vaccines. There are now but few diseases for which a serum or a vaccine has not been tried. Promising results have been obtained with a vaccine in the treatment of common cold, also in acne.

Scarlet Red, for medicinal purposes, is the Biebrich Scarlet R, Medicinal, also known as "fat ponceau." It is an entirely different compound from the dye stuff, also known as scarlet red. It is used to regenerate skin by its action in causing proliferation of the epithelium. It is used in the form of a 5 to 8 per cent. ointment. The results are said to be astonishing. Its use has been extended to the treatment of corneal and other ulcers.

Eosin and other fluorescent substances have come into use in the treatment of abscesses, especially in the presence of sunlight. It destroys the bacillus of tetanus.

Sterilization and Desiccation of Medicinal Plants. Bourquelot has been working for some years on the action of enzymes in plants. He has shown that these naturally occurring plant principles are responsible for many changes that take place in drugs during the ordinary process of drying and later in storage. He advises that the drying of drugs should be rapid and thorough in order to preserve the greater part of the active principles more or less intact. When it is desired to know the condition in which the active principles exist in the living plant, recourse must be had to sterilization with boiling alcohol. In the case of some tinctures made from fresh and dried drugs, such as those of aconite, colchicum, cloves and cinchona, a slow but progressive change occurs when these are made with cold alcohol. If the alcohol and drug be heated to boiling for a short time under a reflux condenser such changes will be avoided. A quicq and thorough drying preserves the glucosides from hydrolysis in a majority of drugs; in other words, it prevents the enzymes from reacting with the glucosides present.

Massol: A New Pill Excipient. An English pharmacist, Mr. P. B. Phillips, has suggested a new excipient for pills, under the name "Massol." It is made by the following formula:

Gelatin	40 grains
Glycerin	2 drams
Sugar	3 drams
Dist. water enough to make 1 oz.	

Place the gelatin in a tared dish with one-half ounce of water. After an hour add the glycerin and heat on a water bath until solution is effected. Add the sugar and heat until the mass weights 1 oz. Now beat the mass vigorously with a spatula until it sets and keep in covered jars.

Massol is claimed to be generally useful in making pill masses. It keeps well, and the beating incorporates a lot of air which whitens it, so that white powders can be made into white pills by its use.

The Phthalein Test is now used to determine the efficiency of the renal functions. Its use is described in the "Archives of Internal Medicine" of March 15. The substance used is phenolsulphone-phthalein. It is a bright red crystalline powder, somewhat soluble in water and alcohol and readily soluble in the presence of alkalies. It is non-toxic, non-irritant locally and is excreted amost entirely by the kidneys with great rapidity. In alkaline solution it presents a brilliant red color, which renders it very suitable for quantitative colorimetric determination. It is used in the form of an aqueous solution containing 6 mgm. to the cc, this dose being administered by subcutaneous, intramuscular or intravenous injection. In acid urine the collor is yellow or orange. The chemical part of the test is easily and quickly carried out.

SUGGESTIONS FOR THE IMPROVEMENT OF SOME U. S. P. FORMULAE.*

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Liquor Potassii Arsenitis. The official directions for this preparation are: Boil the arsenic trioxide and potassium bicarbonate in a tared dish with 100 gm. of water until solution has been effected. Then add enough water to make the solution weigh 970 gm. and lastly add the 30 gm. of Compound Tincture of Lavender.

A person, upon reading these directions and without any further instructions, will naturally select an evaporating dish to carry on the boiling of the salts as directed. The U. S. P. further directs that 100 gm. of water are to be used instead of 100 cc. Why is it necessary to weigh the water, as some of it evaporates in bringing the arsenic trioxide into solution? A flask would be more suitable in preparing this solution. This would lessen the evaporation of water,

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