

VISUALIZING MATERIA MEDICA.*

BY C. J. ZUFALL.

In teaching Materia Medica the spoken or written word is relied upon too much to convey to students ideas which will stick. Authors and teachers improve greatly upon these by the use of pictures, and a good picture will often tell a better story than can be told in several pages of writing. Better still, however, is to display the actual objects and material involved in the story to be told.

Some stories in Materia Medica are simple. For example, a pressed specimen of *Chondrus crispus*, in its natural color, beside which is placed a pressed specimen of the drug as found on the market, tells the student immediately that the only thing done to the seaweed is the bleaching. A similar display of the drug *Fucus* shows that the drug is only the dried seaweed. Under *Agar* such a display of the official product and the seaweed from which it is obtained tells the student that something more complex than simply drying or bleaching must have taken place in order to produce the mucilaginous product known as Agar.

A mounted specimen of *Mentha piperita*, beside which are vials of oil of peppermint and menthol, shows at a glance the relation of these three U. S. P. drugs.

The story of *Aspidium* is also told by such a display. The pressed plant with a portion of the rhizome and stipes cut away to show the green active portions may be placed in a Riker mount. Beside it are displayed representative pieces of the crude drug as it appears on the market. This crude drug shows that the rhizomes and stipes have been peeled; then, a vial of the oleoresin is included as the active constituent. Beside this is a tapeworm sealed in a glass tube to show the therapeutic value of the drug.

A similar display for *Chenopodium* is also of much value. This includes the pressed specimen of the plant showing the part distilled; a vial of wormseed; a vial of the oil; a vial of ascaridol, the active constituent; and then a roundworm sealed in a glass tube to show the therapeutics of *Chenopodium*.

Showing the method of producing turpentine, we have in our laboratory a four-foot log of a long-leaf pine tree which was cut from a tree which had actually produced turpentine. There are still attached to it the gutters and cups used to catch the drip. Along with it are displayed the oil of turpentine, rosin, tar, oil of tar, wood oils, terebene, etc., to show the various medicinal substances derived from the tree.

In the study of *Ergot* each student uses in his laboratory studies a head of rye infected with ergot. For convenience of handling and the protection of the material it is placed in a test-tube and held in place by a cork.

Similarly prepared is the seed of *Strophanthus Kombé* with its awn attached. The awn would be broken off if it were not protected in the test-tube.

ABSTRACT OF DISCUSSION.

L. D. Havenhill inquired whether specimens of the drug were passed to the students. The author replied in the negative, stating that these are examined in the laboratory.

In reply to A. B. Lemon, the author stated that there was no difficulty in obtaining the required number of specimens.

* Section on Education and Legislation, A. PH. A., Baltimore meeting, 1930.

Referring to the mention of lantern slides Rudolph Raabe inquired whether the author would supply others than students of his school, the author replied he had the negatives and would have slides made, if request was made for them.

THE SEARCH FOR THE ACTIVE PRINCIPLES IN THE NARCOTIC SOLANUMS.*

BY FRED B. KILMER.

Through all races and peoples, among the most primitive and the barbaric, in widely separated lands, there is found an inherent belief of a mysterious power or essence in-dwelling in living plants.

In plants of the nightshade kind, there lay a power that would allay pain, intoxicate, kill. Through the ages, in the legends of the savage, in the lore of the peasant, there lives a story of the Mandrake, the Henbane, the Daturas, the Belladonna, and their peculiar power to stupefy, cure and poison.

The people of the ancient pagan world attributed these powers to superhuman agencies. From good spirits came the properties which were benign. Those which were destructive or harmful had their origin in spirits which were evil—devils. The wise man, the man of magic, the priest, crude forerunners of the scientist, believed that in his own person there was power to control these unseen dominions. Plants were poisonous or benign, according to his will.

Men skilled in so-called science through the centuries have continuously searched to find and to explain this hidden power.

Plato and Aristotle, held that these virtues were due to the varying preponderance of the elements—moist, dry, heat, cold. With Plato, the "harmonious love" between the elements instilled into plant life their beneficent virtues. From the "wanton love" of the elements arose their destructive power. Such classical writers upon *Materia Medica* as Dioscorides and Galen for the most part describe the properties and uses of vegetable drugs without attempting to explain the origin or cause of their power. It is notable, however, that in the case of certain poisonous drugs they at times inclined toward ascribing to them an occult power, perhaps a satanic influence, controllable by the use of charms, amulets and incantations. Of more than passing interest is the recognition by these writers of certain plant drugs which, through an identity or similarity of active principles, might be used interchangeably. Galen gives a table in which several of the solanums are so similar or equivalent in effect as to be interchangeable:

"Instead of dorycnium (belladonna)—the seed of henbane.

"Instead of halicacabus, the seed of strychnos.

"Instead of mandragora, dorycnium.

"Instead of the seed of henbane, the seed of sweet briar."

Here we have an inkling of our later discovery of identical active principles (alkaloids) in several of the narcotic solanums.

During the Middle Ages, Albertus Magnus taught that the active properties of plants were produced by the combination of five virtues: "that of the element which preponderates in the composition of the plant, the coöperating virtue of the

* Section on Historical Pharmacy, A. Ph. A., Baltimore meeting, 1930.