

EDITORIAL

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THE VALUE OF INDIVIDUAL EFFORT.

“I WOULD not be one of those who would drive a nail into mere lath and plastering. Such a deed would keep me awake nights. Give me a hammer and let me feel for the furring. Drive a nail home and clinch it so faithfully that you can wake up in the night and think of it with satisfaction, a work at which you would not be ashamed to invoke the Muse. * * * * * Every nail driven should be as another rivet in the machine of the universe, you carrying on the work.”—Henry David Thoreau.

We have often spoken of coöperation; these are times when the loyalty of every individual counts, there should be no neutrals. Just as concerted effort is mandatory in the cause of our country, so is that of every individual pharmacist for pharmacy, so that each one may become a strong support by faithfully doing his part. The great trouble with pharmacy largely is, that too many are standing aloof from doing so, because they seem to feel that what they can do is of little consequence. And still each one has a part in pharmacy and its service to humanity, and has neither right to withdraw nor withhold his support nor belittle his opportunity.

The general, in preparing his plans, cannot ignore the part of the private in the battle; the gunner is dependent on the workman in a far-away munition plant. The medical man must rely on the pharmacist in the pharmaceutical laboratory, if not more directly—on the one who prepares his *armamentarium*. Not one can fail without destroying the efficiency of the other, it is a serious delinquency to disregard the work of any one of them.

What is needed is enthusiasm, which, as Emerson said, “is the leaping lightning, not to be measured by the horse-power of the understanding.” Someone else has said, “enthusiasm is the light that leads and the strength that lifts men on and up in the great struggles of scientific pursuits and professional labor.” It needs that, we believe, in pharmacy, in the importance of its service, and it is the thought of the individual, that his part is of little consequence, that keeps from pharmacists and pharmacy the recognition they and it are entitled to.

The thing is to do our part well, better than it has ever been done before; there may be “laths and plastering” in the construction of the drug business, but let us “feel for the furring,” with the hammer of resolve, drive the nail of our determination into the purpose to progress and clinch it with enthusiasm. Believe firmly that pharmacy has an important part in medicine, and that when it is ignored or neglected, the patient will suffer. The medical man, surgeon or doctor, must look back to the unimportant individual (?), the pharmacist, the person whose part taken by itself may be smaller than his own, yet whose part, if not well done, will prove a serious handicap to his success. And this is applicable to the

pharmacists' service in the Army and Navy. That which the individual can do, and do well, is of real importance, and without doing that, there is deficiency; reversely his coöperation makes for efficiency.

So, then, with the beginning of the year let us drive home, into the thoughts of all pharmacists, the value of individual effort for pharmacy and the Association; each one can do an essential part in contributing to its larger possibilities, by increasing the membership and by participation in the work. One is the minimum, there is no limit to the number of additions each member may be willing to propose and indorse for affiliation in the American Pharmaceutical Association. Every new member adds strength to the organization and makes for its greater possibilities. Be optimistic and enthusiastic, anyone can be pessimistic and indifferent.

E. G. E.

THE IMPORTANCE OF DRUG PLANT CULTIVATION IN THE UNITED STATES.

AMONG the many problems confronting the American manufacturer of drug products, that of securing adequate supplies of crude drugs is of increasing importance. Thus far the cultivation of medicinal plants in the United States has not assumed very great proportions, although many drugs are being supplied in sufficient quantities for domestic needs. A great deal of misinformation has been circulated on the topic and many people have been led to believe that cultivation of medicinal plants is just as simple a matter as the growing of vegetables or crops. This is not the case. We must remember that such plants as Belladonna, Digitalis, Hyoscyamus, Aconite, etc., formerly obtained from Europe, grow wild in their native habitat and are picked by cheap labor, thus making the cost to the purveyor very low. The growing of medicinal plants in the United States, which is not the native habitat of the drugs enumerated above, is a science which requires expert training and supervision. We must provide artificially the conditions under which these plants grow best and the cost and labor is many times what is paid the European peasant who collects drug plants.

Two methods of overcoming the high cost of cultivating drug plants are open to the American grower: first, increasing the number of harvests in one season; second, increasing the amount of active constituent. Experiments have demonstrated that as many as four and five harvests of Belladonna can be obtained in one favorable season if the leaves are stripped from the plants when they attain a certain maximum growth. In former years it was customary to cut down the entire plant at harvest time, thus greatly reducing the yield of Belladonna leaf. There is very little difference in the activity of the leaf of the third or fourth harvesting in comparison with that of the first harvesting as far as the amount of active constituent is concerned.

With regard to increasing the amount of active constituent, experiments

show that by careful selection of seed it is possible to increase in some plants the amount of active constituent three or four times that required by the Pharmacopoeia. Experiments in cross-pollenization have not been successful so far as increasing the amount of active constituent goes. In 500 Belladonna plants grown at Glenolden, Pa., last year the amount of active constituent varied from below $\frac{1}{10}$ of 1 percent to as high as 1.2 percent; the general average was about $\frac{6}{10}$ percent, or twice the Pharmacopoeial requirement. Seed from the plants which yielded a high percentage of alkaloids, when used for propagating purposes in succeeding years, usually produce high alkaloid-containing plants, although this is not always the case. We are confronted with variations due to numerous causes, which must be carefully studied if the drug-plant industry in the United States is to be placed on a competitive footing with that of Europe after the war.

Physiological and chemical tests on the American-grown plants show that some of the old ideas regarding the activity of plants were erroneous; for instance, it has not been so long since American Cannabis was not thought fit for medicinal use, but it has been clearly demonstrated that it is just as active and satisfactory as the Indian Cannabis and our Pharmacopoeia now recognizes it. For many years it was thought that Digitalis leaves of the first year's growth were not active and that only leaves of the second year's growth gave satisfactory results in medicinal preparations. This idea has been shattered also and the Pharmacopoeia now makes no distinction between the first and the second year leaf and rightly.

The problem of properly drying plants after they have been cultivated is in some cases a difficult one, owing to the frequent changes in climate at harvest time. However, this problem is also being solved so that the natural color is preserved to a large extent in the cultivated plants when they are dried, thus obviating any criticism as regards the color of the finished preparations. While the problem of color in pharmaceuticals is merely a psychological one, it seems to be difficult to dispel the belief, especially among laymen, that color is a criterion of strength or activity.

Were it not for the chemical and physiological methods of assaying and standardizing drugs, the fact that American-grown drug plants are sometimes very high in their yield of active constituents would be a source of danger. Obviously, a tincture of Belladonna made from a drug which assays three times the U. S. P. strength would be a dangerous preparation if used in the ordinary dosage. However, the assay shows what the strength of the drug is and what the strength of the finished product is and we can make our dilutions or concentrations accordingly.

The scarcity of some of our important botanical drugs is apt to lead to adulterations. It is fortunate, therefore, that the Government has an organization (Bureau of Chemistry) for detecting adulterants, etc., under the Food and Drugs

Act, thus protecting the physician, the pharmacist and the patient. Nevertheless, there is always opportunity for the perpetration of fraud and "Safety First" must be our motto when purchasing crude drugs and preparing galenicals.

The American crude drug industry has made remarkable advances since 1914, and with the advances that are being made each year and the scientific investigations conducted in the various research laboratories, there seems to be no doubt as to its future permanency.

H. K. M.

PHARMACY AND THE WAR.

PROF. ALEXANDER TSCHIRCH about a year ago delivered a lecture before the German Pharmaceutical Society in which he stated that "the production of a sufficient quantity of food is essentially a botanical problem, as meat is only vegetable food converted by animals into a suitable form." The thought can, in a way, also be applied to the production of vegetable materia medica products.

President C. A. Hill, in his presidential address at the annual meeting of the British Pharmaceutical Conference, July 11, 1917, spoke of the "British Medicine Supply in War Time," in which he referred to the shortage of botanical drug supplies.

A symposium on drug culture constituted part of the program of the Scientific Section at the Indianapolis meeting of the American Pharmaceutical Association. Thus the importance of plant culture is recognized in all countries, and present conditions have intensified the interest of the subject.

Whether the deficient supply of official drugs, the possibility of substituting specially cultivated or other drug-yielding plants for them, warrants the issuance of a supplement to the Pharmacopoeia in which other medicinal agents are to be included, may be a matter worthy of consideration. It is not contended that the necessity exists, but the Government has permitted the use of some non-official drugs, and it might be deemed advisable, in some instances, to give pharmacopoeial sanction also, and at the same time make advantageous changes in certain menstrua, solvents, vehicles, standards and tests; or, it may be more expedient to have these matters taken up in the National Formulary, should the proposition be worthy of serious consideration.

Under *General Principles to be Followed for the Ninth Revision of the Pharmacopoeia* (13, p. XXXIII) is the following: "Supplement.—It is recommended that the Committee of Revision be authorized to prepare a supplement to the Pharmacopoeia at any time they may deem such action desirable." It must be remembered that the conditions now existing are temporary; on the other hand, that the next revision of the Pharmacopoeia will probably not be completed before 1925. Some official drugs, oils, etc., are unobtainable; alcohol, sugar and glycerin are, in a degree, restricted; progress in drug culture may yield drugs

of which the galenical preparations differ physically from those heretofore prepared. There is large demand for preparations for which standards should be provided. This is only suggestive and should be studied carefully from the standpoint of necessity and helpfulness; the prompting is an expression of a desire, not to be delinquent in discovering the needs of pharmacy.

President C. A. Hill, in his address, recommends the promotion of research work by pharmacists in investigation of the extent of deterioration of drugs, chemicals and galenicals under normal conditions of the pharmacy, and also as to how far physical constants are good criterions of galenical preparations manufactured in accord with official directions.

The concluding paragraphs are particularly interesting to us at this time. He recommends the formation of a Public Policy Committee, "on which every side of pharmacy should receive representation proportionate to the merits and magnitude of the interests concerned." Very much like the recommendation of Ex-President Frederick J. Wulling for the organization of the American "body-pharmaceutic." President Hill continues, "the Government to-day will not deal with individuals, but only with associations representing large interests. Such a body could claim to be truly representative of pharmacy, and its views would command attention."

The address concludes: "The third year of the war (July 1917) is drawing to a close, and when we consider how complex a thing is an adequate and complete service of medicine, the difficulties which have had to be met, and how few have been the cases in which supplies have failed; that the standard of quality in the medicine service has never for a moment relaxed—perhaps, after all, pharmacy has not done so badly. To-day, when the depths of chemical knowledge are being plumbed for the purposes of destroying life, there is some satisfaction in the reflection that the resources of medicine and pharmacy are devoted to saving it; not only, indeed, to the curing of the sick and wounded, but to maintaining health of our troops and of the civil population. An adequate medicine service is a national asset; that it has been provided under circumstances of unparalleled difficulties is no small thing."

The same thoughts are thoroughly applicable in this country and our efforts should be continued in persuading the Government to take this view and grant adequate recognition to pharmacy and pharmacists. Without this there is lack of coördination in the medical service whereby injustice is done to business, the military organizations, and civilians. Certainly pharmacy is and has been an aid to many of the departments of the Government and could be made more serviceable if for every department in which pharmacy is concerned, one or more pharmacists would be provided; surely, many difficulties that confront the drug business, as well as the Government, would be avoided.

E. G. E.
