

the two-fold advantages of the capacities of coagulation and absorption. The filtering efficiency of talc was found to be augmented by the addition of small quantities of electrolytes such as sodium chloride. The objection to precipitated magnesium carbonate is the alkalinity which it imparts. For practical purposes of filtration we have found magnesite admirably suited.

#### SUMMARY.

Studies of various filtering media seem to indicate that the efficiency of a filtering medium for preparations of the nature of aromatic elixir depends upon its exhibiting the capacity of coagulating the oil particles by ionic neutralization and absorption by virtue of its surface properties.

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## FIVE YEARS OF STUDY ABOVE THE HIGH SCHOOL SHOULD BE THE MINIMUM OF PHARMACEUTICAL EDUCATION.\*

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At the Rapid City, South Dakota, session of the Section on Education and Legislation, A. Ph. A., 1931 meeting, I presented a paper on the "Completion of the Junior College the Next Prerequisite." (Published in the *JOURNAL OF THE A. Ph. A.*, April 1930, Vol. XIX, No. 4.) In the paper I advocated the "two-and-three" plan; that is, the completion of the Junior College course of two years of purely academic work and three years of technical pharmaceutical work following. Two years have now elapsed. The paper brought some comment, mostly adverse, although the proposal received some favorable support. One correspondent wrote: "Because I always read what you write I went through your paper. You should write and propose more frequently as I need more entertainment." The same critic commented even more caustically when the three-year and again when the four-year courses were proposed, but the minimum four-year course is now established as the five-year course will in the natural course of events become the accepted minimum course duly. Another friend wrote: "Your proposal to make the completion of the two-year academic Junior College course a prerequisite to technical study in pharmacy, is only another evidence that you should be put into the charge of a strong committee of restraint. Now that nearly all medicinal preparations are made and packaged on the large scale under conditions and checks that make mistakes impossible, your claim that the practice of pharmacy is a responsible one is simply preposterous. No education is necessary to simply buy and sell." Notice the reflection on both the pharmacist and the merchant. This critic's claims fall

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\* Section on Education and Legislation, Miami meeting, 1931.

to the ground in the face of the fact that the recognized business schools require a two-year academic college preparation before admission to the study of business subjects. A heartening letter from another commentator reads: "You are perfectly right in insisting that pharmacy has every right, indeed is obliged, to place its standards upon a basis already established by other and 'no more responsible' professions. Proper education including the cultural and ethical qualities that go with it, point the only way out of our present situation and the only means for our rehabilitation and the return of our professional self respect. You establish the five-year course and others who are hoping for it, will be better able to increase their requirements." Another writes: "Pharmacy is in all respects a division of medicine, the most important one, in fact, and should therefore be characterized by the same standards upon which our medical brethren insist."

Advancements have ever had to fight their way against too conservative or uninformed or prejudiced minds and that is well, because development won against such opposition must have merit. The four-year course is not the end of the development begun with the abolition of the old-time two-year course. It is only a milepost, and beyond it is another milepost and then another in accordance with the law of civilization and human progress. There is nothing in history to prove that lower standards are in the long run better than higher, and civilization itself is proof that higher and ever higher standards are the law for the increase and maintenance of the welfare and safety of mankind. The great mass of the people do not think in large enough terms to realize this fact, and must be pushed forward by the comparatively few who do.

Progress is mental first of all. There is the individual mind and the collective. Great thoughts and projects arise in the individual minds who think in the larger terms. It is pioneering work on the part of the few to get new thoughts, ideals, projects, into the consciousness and acceptance of the group or collective mind. The higher the average of the common sense of the mass mind and of the smaller collective or group minds, the easier is the work. The average is not nearly high enough, but it is advancing perceptibly and is gaining momentum in an intellectual sense, and I believe in a moral one as well, as evidenced by recent developments in practically all walks of life. The one great collective human mind concerns itself, or should, with matters common to all humanity. For matters not common to all humanity, there are divisions or group minds, collective or inclusive in their own spheres. Every social group has its own collective mind in this respect, including individual minds who are leading or educating the mass minds in matters common to the group. The various professions are examples of such groups or divisions of the collective mind. There are the group minds of medicine, pharmacy, dentistry, law, education, business, mines, engineering, architecture, art, etc. Each of these group minds thinks in its own terms principally: the medical group mind is different from the legal because it has medical and not legal things to think about, and vice versa. Each of these social groups has its own further subdivisions, and so, for example, medicine has smaller groups of specialists, each subgroup thinking in the terms of its subdivision, but in relation to the larger group. The pharmaceutical group mind has its subdivisions, some of which are: the educational (teachers and the colleges), the practical (practising pharmacists), the regulative (the State Boards), the industrial (manufacturers), distributive (wholesalers), etc.

Each of these subgroups, like all such divisions, thinks in terms peculiar to itself and usually refuses to think, even remotely, or occasionally or partially in the terms of the other divisions. And here I put my finger on a weak spot to which I will revert at another time.

For purposes then of what I am attempting to convey, let me classify: (1) the one great collective human mind; (2) the group minds or divisions of the collective mind and (3) the individual minds. The individual minds are basic in their several aggregates to and constitute the group minds and through these, the entire collective mind. All initiative is taken by the advanced individual minds, and in matters relating to or affecting the groups is or is not advanced by the group minds. The individual minds cannot, of course, do certain things, nor can the group minds. For example: all the proposals for higher pharmaceutical educational standards were made by individuals, but these could not actualize them. However, through the agency of the pharmaceutical group mind, which functioned at first through the A. P. H. A. and now operates also through other subgroups such as the American Association of Colleges of Pharmacy, the National Association of Boards of Pharmacy, the state associations, the various conferences, seminars, the Research Council, etc., most of the worthwhile and timely proposals made by individual minds have slowly become actualized. The individual minds propose; the group minds enact; that is, if they are convinced affirmatively. To bring about this conviction is the difficult work. Even the most worthy proposals meet at once such obstacles as self interest, prejudice, jealousy, indifference, ignorance, inability to think a matter out to its logical conclusion and other infirmities of individual minds. The struggle is among the individual minds. When these minds agree, or a majority of them, enactment by the group mind follows and the agreement becomes a guiding principle for all. The initial, basic, preparatory work is therefore with the individual minds. Work with the group mind follows. The enactments of the group minds relate to matters affecting only the respective groups. Group mind matters may be said to be of two kinds: (1) Those relating exclusively to the group and (2) those relating to other groups. Similarly, individual mind affairs are (1) those pertaining to the self exclusively, and (2) those having to do with other individual minds. Group mind matters relating to other group minds bring the group minds into contact and sometimes into conflict. In all such matters the group minds, or a majority of them, must agree before they can produce any advancement, just as the individual minds have to agree in matters relating them to other individual minds before group mind action can be expected. Group minds must meet other group minds for agreement upon matters common to them all. The sum total of these matters in common constitutes the affairs of the one great collective human mind.

For a clearer understanding of what I am trying to convey we can compare: (1) The individual minds with the minds of individual citizens and with the minds of individual pharmacists; (2) The group minds with the minds of the state legislatures and with the minds of organizations; (3) The collective mind with the mind of Congress—as yet unorganized pharmaceutically. There is therefore a universal mind relationship. From the closest to the remotest degree every individual mind is related to every other individual mind and its life and affairs; to every group mind and its life and affairs and to the great collective or mass mind. The collective pharmaceutical mind is as yet unorganized. Its organization into a federation

representing all subgroup minds is pharmacy's next important self-defensive measure. (I have frequently written about the need of a federation of all organized divisions of pharmacy. Reiteration is not needed here, but all interested are referred to my papers and addresses published on the subject.

Applying what has been said above, emphasis should be placed upon the need of directing and educating the individual pharmaceutical minds into channels of better thinking. Most individual minds are open to conviction and willing to be guided rightly by, shall I say, advanced individual minds? But the advanced minds are not sufficiently marshalled to do the needed work. As already stated, the individual minds must associate themselves into group and subgroup minds for purposes of enactment of agreements binding upon all thus associated. The various pharmaceutical organizations already represent in a respectable degree such association of individual minds, but the respective subgroup minds have not planned sufficiently procedures for the further education of the individual minds for still needed higher enactments. The AMERICAN PHARMACEUTICAL ASSOCIATION, the American Association of Colleges of Pharmacy and the National Association of Boards of Pharmacy are the organizations nearest to this needed planning and work, because they are so intimately related to education and education is most fundamental and basic as generally agreed. The work they have already accomplished bears out what I am saying and advocating, only they should go further and accelerate their paces. It would be proper for these group minds to launch a well-planned and definitely directed movement toward generally higher educational and practical standards and ideals of the individual minds. They would not be alone in so doing, because the group minds of other professions have already preceded them as shown by their respective higher standards of education and personnel. What the plans and procedures should be I have not now the time to indicate fully even if I could; indeed the plans should be formulated by many minds, but they should include: (1) a study of the procedures already largely completed by other professions; (2) wise selection of recruits to pharmacy; (3) the education and correlation of the individual minds especially of students and other recruits specifically toward the realization and appreciation of the value, ethically and materially, of higher standards and (4) the placing of a watchful keeper at the door to pharmacy. My proposal to require the completion of the Junior College for entrance upon technical pharmaceutical study, though an important one, is only part of what a concerted plan should be. It is only another of the periodical suggestions made by an individual mind realizing the need of additional enactments, instead of the command of the organized pharmaceutical group mind presenting its mature conclusion after careful thought and investigation, but that is the way all advancements have been started in the past and may have to be continued for a while longer.

It may be that this Section is sufficiently informed and convinced in the matter to propose the "two-and-three plan." Such a proposal would bring the matter definitely to the attention and consideration of the pharmaceutical group mind and thus put it in line for some sort of disposal. The AMERICAN PHARMACEUTICAL ASSOCIATION, and this Section especially, would thus add to their many previous actions in the interest of better pharmacy.

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