

Section on Practical Pharmacy and Dispensing

Papers Presented at the Sixty-Third Annual Convention

THE MISCIBILITY OF ICHTHYOL.*

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Several months ago a prescription, calling for ichthyol, tincture of iodine, olive oil, acacia, and water, was sent to the "query editor" of one of the pharmaceutical journals, accompanied by a request for information as to its compounding. The writer was asked to try it out, and found that a passable "shake mixture" resulted when the ichthyol was triturated with the oil, followed by emulsification *ad lege artis*.

In replying to the querist the word "dissolve" instead of "mix" was inadvertently used. A correspondent called attention to the fact that ichthyol was not soluble in oil and the editor replied that "mixing" was meant and not "dissolving."

The correspondent replied, claiming that ichthyol was "neither soluble nor miscible with oils" and sent along a sample consisting of one part of ichthyol and two parts of cottonseed oil. The appearance of this apparently bore out his statement.

The writer remembered having somewhere seen the statement that "ichthyol was miscible with oils" and examination of the label on the jar of ichthyol in stock found that it read as follows:

"Ichthyol is soluble in water, or in a mixture of equal parts of water, alcohol, and ether; partially in pure alcohol or ether, miscible with glycerin or oils."

Turning to the "New and Nonofficial Remedies" published by the Council on Pharmacy and Chemistry of the American Medical Association, 1912, 1913, 1914, and 1915, we find the same statement; the "Extra Pharmacopœia" and other reference books also contain the same or a similar statement.

Every pharmacist knows that we rarely come across a substance that is miscible alike with water and oil, yet this statement quoted above has been made for years and apparently without contradiction. I have been unable to find a similar statement in the "Real Encyklopedia" or "Hager's Pharmaceutische Praxis."

Thinking it of enough interest to dispensing pharmacists to merit a little investigation, the samples contained in the two bottles, marked respectively ichthyol and olive oil, and ichthyol and cottonseed oil, were made by triturating the two in a mortar. Their appearance shows that they are not miscible. At first, before separation and adhesion to the sides of the bottle took place, partial suspension

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seemed to have been brought about, but close observation showed that the ichthyol was present in the form of small globules almost similar in appearance to the globules formed when an oil is violently shaken with water. Complete separation took place very rapidly.

Thinking that different oils might act differently, the accompanying set of "mixtures" was made, using 4 gm. of ichthyol and 16 gm. of each of the various oils. The samples marked 1, 2, 3, etc., were prepared by first weighing the oil into a tared bottle, followed by the ichthyol and then shaking.

The following oils were used: No. 1, olive; No. 2, sesami; No. 3, expressed oil of almonds; No. 4, cottonseed; No. 5, corn; No. 6, lard oil; No. 7, linseed; No. 8, castor. The results with all were more or less alike. It was impossible to mix any of the samples. Noticing, however, that they all acted somewhat different from those made some weeks past, and recalling that the latter ones had been made by trituration, duplicates were made. The samples marked "1a," "2a," etc., were made by weighing the ichthyol into the mortar and gradually adding the oil with constant trituration. Results were practically the same as when the oil and ichthyol were weighed into the bottle and shaken; if anything, the latter were more "miscible," or rather more easily "miscible" than when the mortar was used.

The fact that the separated ichthyol appeared to be more mobile in the recently prepared samples than in the two older ones, led to a comparison of the two samples of ichthyol employed. The sample used in making up the two older samples had been in stock for about one year. It had been kept on the shelf in the well-known glass jar with tin cover in which the article is supplied to the trade. In comparing it with the newer and larger sample, just received from the agent and contained in a glass bottle, it was found that the older sample had apparently lost some moisture due to evaporation, as it was much thicker. Upon heating at 100 degrees to approximately constant weight the loss of the older sample amounted to 35.9 percent, whereas that of the newer was 41.8 percent.

The difference in water content might account for the difference in behavior. Not enough of the older sample being available, this could not be determined. Another rather striking difference is, however, noticeable. The supernatant layers of oil in the older samples practically have their original color. All of the second set are more or less darkened. Apparently a small amount of the ichthyol has gone into solution. This must mean, that either in the old sample of ichthyol other changes than simply loss of water have taken place, or that the ichthyol on the market today is different in some respects from that of a year ago.

While it might be interesting to enumerate the slight differences in behavior as to this discoloration as well as to that of the separated ichthyol in the different samples, I do not think it important enough to discuss same in detail. Comparison of the samples will speak louder than words.

Ichthyol is a proprietary article. The Council on Pharmacy and Chemistry of the American Medical Association issues the New and Nonofficial Remedies as a guide to physicians in prescribing these so-called "newer remedies." I therefore feel that such a statement as quoted above is misleading and might easily lead to serious misunderstanding between physician and pharmacist as well as to loss and suffering to the patient.

Ichthyol is *not* miscible with oils and a physician writing for a mixture of ichthyol and oil would obtain an entirely different product from what he had been led to expect by the statement appearing in the "N. N. R.," as well as on the label of the ichthyol containers and the literature put out by the manufacturer thereof.

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ARRANGEMENT OF THE PRESCRIPTION DEPARTMENT.*

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The modern druggist is as far away from the "mysterious" in regard to the conduct of his prescription department as he is far away and different in his method of store merchandising when compared to the apothecary shop or drug store of ten or fifteen years ago. Therefore it is not to be wondered at that improvement in arrangement, fixturing and equipment in the modern prescription room has undergone many changes to keep pace with the demands of the progressive merchant.

The object of this paper is to suggest to the members of the American Pharmaceutical Association who are contemplating changes in their prescription department a few suggestions which seem to the writer worthy of consideration.

First, let us think for a moment of the actual needs of the smaller merchant, the store doing in the neighborhood of \$25,000.00 a year. These stores to make money necessarily have to be clerked with economy; hence the proprietor generally alternates with his one prescription or head clerk, as he is generally termed. To remove the prescription department in such instances to the back part of the store across the back or in either corner is bad for service and should not be done. If any reader's store is thus arranged, I would suggest you change at your earliest convenience to a position of the drug counter which should be located not more than half way back in the store, and so constructed that the prescriptionist could have a good view of the store. This statement will shock some of the straight-laced ethicals, whose "Safety First" ideas call for isolation, concentration, uninterrupted, etc., all necessary factors to be insisted upon in the conduct of large departments employing many men whose total daily output of prescriptions compounded will reach or exceed two hundred and fifty. There, such discipline is necessary. Please do not misunderstand me. I am not belittling dignity or safety; but we are considering the one man proposition in the smaller town or the neighborhood druggist, who, because of the smallness of his business, is obliged to be general clerk as well as prescriptionist; hence the necessity of constructing, arranging and locating this department so it will fit into the merchandising scheme in such a way that the proprietor or head clerk has general supervision of the whole store at all times. The result of this arrangement will be satisfied customers, increased business and a competence worthy the calling, because the mas-

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