

methyl alcohols reduced to the same temperature by means of the temperature coefficients given by Doroshevski. The values compared are those of Deville, Wagner, Leach and Lythgoe, Doroshevski, and Andrews for ethyl alcohol; and of Drude, Wagner, Leach and Lythgoe, and Doroshevski for methyl alcohol.

HABIT-FORMING DRUGS.*

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To all of us this subject is more or less familiar and generally speaking we as pharmacists have a very clear understanding as to what are or what are not habit-forming drugs. However, many drugs that were considered a few years ago as harmless have been proven harmful and habit-forming, this is probably best illustrated by one of the so-called derivatives of morphine, heroin or di-acetyl morphine.

There is not today a morphine habitue who will not as readily use heroin as they formerly used morphine. The sale of heroin or di-acetyl morphine or its tablets, has increased tremendously, not only with the drug trade, but large quantities of the drug have been disposed of by peddlers to habitues, so that those having the enforcement of drug laws have been compelled to use every means at their command to circumvent this traffic.

At the outset, and after this condition became known, it seemed almost impossible with the present laws to reach the real offenders, however, after consultation with many who were in a position to advise, and after much deliberation a decision was reached to bring a case in court with the hopes that something might be done. This was tried, with the result that the court held that heroin came under the provisions of Sec. 11, of the "Act to regulate the practice of pharmacy and the sale of poisons," that heroin was a salt of morphine, consequently the law had been violated, as the sale had not been made on prescription, and imposed a moderate penalty. Since then several more cases have been tried with like results.

While this is a decision of the lower or Police Court, no appeal in any case having been taken, it consequently stands as to settling the status of heroin, in the District of Columbia, unless or until in some future case brought it is carried to the Appellate Court of this District. It is not for me to predict what a higher court might or might not decide if such a case is brought, but it would seem that, using the rule of reason as defined by the U. S. Supreme Court, and taking into consideration the proper protection of the public health, coupled with the fact that heroin is a product of morphine, and by many authorities considered the di-aceteate of morphine, it is reasonable to expect that the higher court would so construe the law as to include heroin or di-acetyl morphine as a salt of morphine, thereby approving the decision of the Police Court.

With the decision of the Police Court and unless it is reversed by a higher court all sales of heroin or its salts, in the District of Columbia, can only be

*Read before the City of Washington Branch, Nov. 13, 1912.

made on the prescription of a physician, dentist or veterinarian, said prescription cannot be renewed except on the written order of the original prescriber, and further, preparations containing more than 1/4 gr. of heroin to the ounce cannot be sold except on prescription.

What then is the true position of apomorphine, codeine, dionin and peronin, all of which are derivatives of morphine and some at least can be used interchangeably to produce similar effects; likewise what is the position of those derivatives and substitutes for cocaine?

Should not some means be devised to prohibit the promiscuous use of all of these products by the public? Personally I believe they should not be sold or used other than by the advice of a physician, and then only for the occasion for which it was prescribed. This then makes further legislation necessary, and, while the drug trade has had the past few years legislation sufficient, it seems now necessary to amend the present laws so as to completely stop the promiscuous sale and traffic in all dangerous and habit-forming drugs.

Shortly after the decision of the Police Court previously referred to, the writer submitted to many scientific gentlemen and several bureaus of the government the question as to the status of the so-called derivatives of morphine, apomorphine, codeine, dionin, heroin and peronin and requested an expression of opinion as to whether they were or were not salts of morphine. The answers received show much difference of opinion, as for instance, one bureau classes all of the products as derivatives and says they cannot be considered as salts; the chief of the chemical division of another bureau classes heroin as a salt of morphine, the di-acetate, and quoted good authorities for this decision, the other salts as derivatives; the chief of another laboratory likewise classes heroin as a salt of morphine, and says the other products are not salts of morphine, yet he calls attention to the definition of a "Salt in Chemistry" as defined by the Century Dictionary, "Any acid in which one or more atoms of hydrogen have been replaced with metallic atoms or basic radicals; any base in which the hydrogen atoms have been more or less replaced by non-metallic atoms or acid radicals, also, the product of the direct union of a metallic oxide an anhydride." (J. P. Cooke, Chem. Phil., p. 110). Also, "from a purely medicinal point of view the several compounds named have physiological properties more or less related and several of them at least can be and are used interchangeably to produce similar effects." He further says from a more liberal point of view and under the interpretation of the U. S. Supreme Court, of what is meant by a "reasonable" interpretation, these preparations might be considered salts of morphine.

Another gentleman of high standing in the scientific world says, apomorphine is dehydrated morphine and therefore morphine minus a molecule of water. He classes all of the other products as salts of morphine and further holds that the words derivative and salt, in this connection, should be considered as synonymous terms.

Others communicated with failed to reply or their answers were evasive. We therefore clearly see that scientific men differ, some looking upon the question from a scientific viewpoint only, while others have considered the question in the broadest possible sense.

Recently the New York Board of Health has held that codeine and heroin are not salts of opium or morphine.

From the above it will be seen that this question is far from being settled and I would therefore then recommend that in all new laws or amendments proposed to present laws, that the phraseology used in the narcotic section be made more definite and explicit, reading possibly something as follows: "Morphine, salts of morphine, its derivatives or substances having similar narcotic properties and any other preparation or substance containing any morphine, salts of morphine, derivative of or substance having similar narcotic properties." This same suggestion to apply also to cocaine, opium and chloral hydrate.

While discussing this subject and along the same lines to be considered there should be a provision in every pharmacy law prohibiting the sale of any narcotic or habit-forming drug or poison, by any one, except a licensed pharmacist or directly under the supervision of a licensed pharmacist, whether it be at retail or wholesale.

The sale of narcotics and poisons by dental supply depots, surgical supply houses and other places of like character should be prohibited, unless they are under the direct supervision of a licensed pharmacist, sales then to be made to licensed physicians or dentists, and only on their written order, which order should be filed for a definite period and should state specifically the use for which said drug was intended and it should not again be refilled.

Recently the Commissioners of the District of Columbia submitted to the Board of Pharmacy, of which I am a member, a proposed bill to supersede the bill now pending before Congress, proposing to grant special privileges to dental supply depots only, and requesting an expression of opinion of the board. After discussing the necessity of any such measure, taking into consideration the provisions of the present law which clearly provides for the wholesale business, the board disapproved same for the following reasons.

It is unnecessary, the present law being ample and sufficient and easily complied with.

It would establish a bad precedent which would certainly lead to similar demands from other classes.

It is class legislation for the reason that it provides for the dental branch only.

Further, we believed the sale of habit-forming or narcotic drugs should be further restricted, rather, than by law extended, the present law not working any undue hardship on anyone and the sale by a dental supply depot, in violation of the present law, of 200 ounces of cocaine tablets, to a dentist in another state, as admitted at a hearing on this question, the past winter before a Senate Committee, should be sufficient reason to further restrict the sale of narcotic drugs instead of extending the privileges.

The Board submitted the proposed bill to those gentlemen appearing at the last hearing in opposition to the pending measure of similar character, with the result that each any every one of them have disapproved this new amendment and the Commissioners of the District of Columbia have been so notified.

I therefore then again recommend that all pharmacy laws enacted should contain a rigid provision applying to the wholesale distribution of narcotic drugs by

placing their sale under the supervision of a licensed pharmacist, as is required by the law of the District of Columbia, further some provision covering interstate shipment of all such products is badly needed and should be enacted in the near future.

THE RELATION OF PHARMACY TO DENTISTRY.*

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A proper consideration of the subject which has been assigned to me, "The Relation of Pharmacy to Dentistry," includes three factors. The pharmacist and his work, the dentist and his work, and the layman with his needs and desires. In other words, the relationship between pharmacy and dentistry is quite similar to the relationship existing between pharmacy and general medical practice, with the very important difference that the dealings are proportionately very much less between the two former. Pharmacy may be defined as the art of preparing and compounding medicines, while dentistry may be defined as the science or art of caring for the teeth and their diseased conditions. If the work of the dentist, so called, were to be confined to the care of the teeth alone, the relationship between pharmacy and dentistry would be very limited indeed. While the term dentist is almost universally employed, I am pleased to state that there is a very marked tendency in favor of the term stomatologist, this being more in keeping with the practice of one who has for his field of activity the entire mouth cavity.

In a recent visit through the middle West, I noticed many times, and with considerable pride, the inscription "Stomatologist," where the term "Dentist" would formerly have been employed. In this city the leading dental society is known as the Academy of Stomatology, and the American Medical Association has its section on Stomatology. I mention these facts to impress upon the minds of those present that the work of the dentist is no longer confined to the care of the teeth alone, but that his scope properly includes all tissues both hard and soft within the cavity of the mouth. Filling teeth as a means of preventing the progress of dental caries calls for no intercommunication between the dentist and the pharmacist; the treatment of an alveolar abscess, either acute or chronic, can be carried on by the dentist independent of the pharmacist. Prosthetic appliances can be inserted, and, in fact, all work which strictly speaking was formerly considered within the extent of dental practice could proceed with a very few drugs and without any dealings in common between the pharmacist and the dentist. But as already intimated, the dentistry of today is stomatological in extent, and to a great degree prophylactic in character, and while a majority of the operations performed on the teeth are fundamentally mechanical and necessarily so, pathology involving the mucous membrane and a better recognition of the importance of oral and dental prophylaxis in many instances calls for the employment of drugs for their proper care and treatment, and it is chiefly for this reason that there is

*Read before the Philadelphia Branch, Nov. 5, 1912.