subsequently both confirmed and denied by different writers.

Any remedy which is claimed to exert a favorable influence on so grave a malady as carcinoma deserves the most careful and impartial study. Accordingly, in order to repeat these experiments I procured a sample of *chelidonium majus* and had prepared from it the mixture of extract, distilled water and glycerin recommended. A number of cases of epithelioma were subjected to Denissenko's method, which was faithfully carried out in every particular. A brief account of a few of these may here be given.

A lady 63 years of age had noticed a dry, papillary growth upon the lower lip for about two months. The tumor was small in size, dry, wart-like in appearance and the seat of occasional stinging pain. There was no ulceration. At times the patient picked at the little tumor and caused the exit of a few drops of blood. Otherwise there was no discharge. The neighboring glands were not involved.

A second lady of about the same age, had been afflicted with a hard, dry, wart-like excrescence upon the left cheek a short distance external to the chin for about three months. The lesion was moderately painful and had very slowly enlarged. It was about half an inch in average diameter, its outline being rather oval. Here also was no implication of the glands.

Both the preceding cases, therefore, being typical superficial epithelioma not far advanced, attended by no glandular or systemic complication—in other words as yet local lesions—might fairly be regarded as particularly amenable to any treatment having power to influence carcinoma.

A third case exhibited epithelioma of the lip in a more advanced stage. The sufferer was a man aged 70 years, in whom the disease had existed for seven months. It had gone on to ulceration and there was the characteristic sore with its steep, hard edges, indurated base and raw, red surface with a tendency to hemorrhage. There was slight enlargement of submaxillary glands but no cachexia. This case was less favorable to any treatment but nevertheless was by no means hopeless.

In a fourth case the patient was a man in whom epithelioma had existed for ten months. He gave his age as 46 years, which is rather early for the advent of this disease. The lesion made its appearance as a dry scab on the tip of the nose. The patient scratched the scab off but it soon redeveloped and from that time the affection had continuously and progressively spread. In the beginning the sore had been dry, but at a later period it discharged a thin seropurulent matter when picked. He had not experienced much pain but at times a tingling or stabbing sensation affected the nose. Latterly he had begun to suffer from pain radiating from the nose into the temple and forehead. The surface had ulcerated.

A woman 66 years of age, was afflicted with an epithelioma of the right cheek. The disease had begun a year previously as a hard crust which gave no pain. In the course of a few weeks the crust had fallen, leaving a dry, scaly base. There was no redness of the surrounding skin. The spot of disease began to enlarge and the surrounding skin became red. The lesion was very hard to the touch. For two months the surface had been ulcerated and was the seat of extreme lancinating pain.

I made use of celandin in other cases of epithelioma in different stages and different situations, but it is unnecessary to cite the histories of case after case. I followed precisely the directions given above as to injections, painting the surface and internal use of the drug. I regret very much to be obliged to say that I could observe no appreciable effect on the growths. The remedy seemed to exert in some cases a certain tonic influence but beyond that action was of no value. I am consequently unable to corroborate the results of Dr. Denissenko.

An experience similar to my own has been reported by a number of Russian physicians. In some cases these observers saw collapse follow administration of the remedy. Kalabine made the same observation as myself, viz., some amelioration of the general condition and increase of strength but no local effect. Botkine has recorded an unsatisfactory experience. Nevertheless, it is proper that clinical investigation should be continued. Dr. Samson journeyed from England for the express purpose of visiting Dr. Denissenko, studying his methods and observing his results and was led to the belief, from what he saw, that the treatment has a basis of merit. Dr. Robinson of Constantinople, has published the history of a case in which the use of celandin was followed by marked improvement.

There is no doubt that the local application of the juice of *chelidonium majus* will destroy certain non-malignant hypertrophic lesions as warts, corns and callosities. It may also be serviceable in chronic eczema; in fact in all hypertrophic conditions of the integument due to perverted nutrition or chronic inflammation. I am of the opinion, however, that it will be found destitute of influence upon the development of heterologous, malignant neoplasms.

CARVACROL IODID.

Presented to the Section on Materia Medica, Pharmacy and Therapeutics, at the Forty-eighth Annual Meeting of the American Medical Association, held at Philadelphia, Pa., June 1-4, 1897.

BY ARTHUR H. COHN, PH.G., M.D.

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This substitute for iodoform is offered to the profession because of the unpleasant odor, often irritating character and, last but not least, of the non-antiseptic properties of the latter. It is a well known fact that iodoform is not an antiseptic, so we must look forward to a preparation which will fulfil our wants. Bacteriologists have proven that cultures of pathologic and non-pathologic bacteria may be propagated on it. Shirmunski demonstrated the non-antiseptic properties of iodoform as follows: He added to a gelatin solution iodoform and sterilized water; this mixture again was poured into shallow dishes, allowed to evaporate, on which iodin was liberated, but nevertheless bacteria grew on this culture medium. He also experimented by mixing staphylococci and streptococci with iodoform, but after making culture from the mixture found that not only were the pus germs propagating, but also that bacteria which were originally found in the iodoform were multiplying. Only freshly prepared iodoform was found to be free from bacteria in some cases.

Dry heat or steam, or washing with ether, can not be applied in sterilization of iodoform, on account of the two former decomposing it and the latter leaving scales upon evaporation. Corrosive sublimate can not be used because the red iodid of mercury results. Washing with solution of carbolic acid was also recommended, but was found to be uncertain. It will

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easily be seen how difficult it is to obtain a sterile preparation of iodoform, and it is no wonder we are looking forward to a preparation which will take its place.

The preparation which I should recommend to the profession for consideration is iodocrol or carvacrol iodid. Carvacrol is an isomer of thymol, differing only in relative position of the hydroxyl groups in the nucleus. It is manufactured in the following manner: Two grams of carvacrol and thirty-eight grams of potassium iodid are dissolved in 40 c.c. of a 10 per cent. aqueous solution of sodium hydrate. To this a solution of chlorinated soda is gradually added under continuous stirring until no more of a precipitate is found. During the reaction the mixture is kept cool by placing the vessel in cold water. The precipitate is collected on a filter and first washed with water to which a very small quantity of alkali has been added, and then with pure water. It is then allowed to dry at the temperature of the room. The product is a bulky, grayish yellow or buff-colored amorphous powder having a faint aromatic odor. It is soluble in ether, chloroform, benzin, carbon disulphid, volatile and fixed oils. From its solution in ether and chloroform it is precipitated on the addition of alcohol, becoming paler in color. This purified product did not show signs of shrinkage until above 170 degrees C., and at 200 degrees C. had become tarry and black, but not liquefied. It combines the antiseptic properties of carvacrol with those of iodin and possesses the advantage over iodoform in being odorless or nearly so, and in being five times as bulky.

Experiments have been made to grow staphylococci and streptococci on carvacrol iodid, but with negative results, thus proving it to be a true antiseptic. It may be used as a dusting powder, either pure or diluted with boracic acid. In the treatment of the nose and throat it is best used in a solution of almond oil or olive oil. It has been used as a dressing for wounds to a great extent in Milwaukee in the National Home of Volunteer Soldiers. It is also manufactured into gauze. It may be used with great benefit in almost all surgical dressings; eczema, pruritus, chancres, chancroids, etc.

In conclusion, I would say that this preparation has so many advantages over iodoform, especially so of being a true antiseptic, that I sincerely recommend it to the profession and hope it will be given a fair trial.

A NOTE ON TWO NEW CREOSOTE COMPOUNDS: CREOSOTE VALERIANATE AND GUAIACOL VALERIANATE.

Presented to the Section on Materia Medica, Pharmacy and Therapeutics, at the Forty-eighth Annual Meeting of the American Medical Association at Philadelphia, Pa., June 1–4, 1897.

BY FRANK WOODBURY, M.D.

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In these days of new remedies of ephemeral usefulness and evanescent reputation, it is refreshing to take up, for brief consideration, a drug with an established record of more than half a century. We recall the fact that while experimenting with tar from beech-wood, Reichenbach, in 1832, first obtained a fluid substance, which, on account of its possessing pre-eminently the power of preventing putrefaction in organic substances, he termed "creosote," or "flesh preserver." That expert chemist also fully recognized the fact that the new chemic agent was not a simple, but a very complex, substance, being composed principally of hydrocarbons of the aromatic group. It also contains a variable quantity of water. According to a recent authority, Marasse, it contains phenol, cresol, phlorol, guaiacol and creosol; also methylcreosol and the methylic ethers of guaiacol, phlorol, etc. By fractional distillation, Hofmann separated the dimethylic ethers of pyrogallol, of methyl-pyrogallol and of propyl-pyrogallol from that portion of the creosote which passes over at a temperature above 220 degrees. Hofmann discovered a new body, which he named coerulignol, possessing powerful toxic properties and which should be carefully removed from creosote that is designed to be used for medicinal purposes. Its presence may be detected by treating an alcoholic solution of creosote by a test solution of barium hydrate. If coerulignol is present the solution will turn blue or show a bluish tinge. Benzin may be substituted for alcohol with the same result. The United States Pharmacopeia has adopted this as one of the tests indicating the suitableness of a specimen of creosote for medicinal use.

I have referred to the early studies of creosote by its discoverer, Reichenbach, in order to bring into marked prominence the fact that it was first obtained from tar from the beech wood, and the early experiments made upon this agent, not only chemically but also physiologically and clinically, were made with the form of creosote which is still considered the best for medical use and which is now used almost exclusively in therapeutics. An analogous substance obtained from coal-tar is simply a mixture of phenol and cresylol of variable composition, or in other words an impure carbolic acid. These differ, chemically, principally in the following characters: Creosote from wood-tar added to an equal quantity of glycerin is precipitated upon the addition of water; added to collodion it does not coagulate it; and when treated with nitric acid and heat, by Clarke's method, yields oxalic acid. The so-called creosote from coal-tar is not precipitated by water from its gelatin solution; it does coagulate collodion, and yields picric acid when treated with nitric acid. There are corresponding and equally well marked differences between the two compounds in their physiologic action, the most important being the comparative innocuousness of pure wood-tar creosote, which can be taken in large doses, not only without toxic symptoms, but with decided therapeutic results, 500 drops daily having been taken without ill effect.

It has unfortunately occurred that, for many years, the coal-tar extractive was frequently dispensed for creosote, and the latter consequently fell into disrepute for a time on account of the accidents and untoward results from its use. Creosote, according ro Dr. H. C. Wood, is also liable to be adulterated with eupion. In the latest edition of the "United States Dispensatory," by Professors Wood, Remington and Sadtler, the statement is made that "Commercial creosote almost always contains carbolic and cresylic acids from coal-tar, and indeed, much of what is sold for creosote is nothing more than impure carbolic acid." I can not, however, agree with these distinguished authorities in the statement contained in the sentence immediately following the above, which says, referring to carbolic acid, that "this acid strongly resembles creosote, and this resemblance probably extends also to their therapeutic effects, so that the

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