

would be difficult to arrive at a satisfactory conclusion regarding the preservation of the sexual function.

Most of my recent patients have been up and about at the end of forty-eight hours, the gauze packing having been removed twelve to twenty-four hours after the operation, and the drainage tube usually at the end of forty-eight hours. From then on I consider the patient better out of bed than in. The normal bladder function has been speedily reproduced in all of these later cases.

As to mortality, I have now operated on 34 cases. I did the first 23 without a death; I lost the twenty-fourth and twenty-sixth cases. They were each very feeble old men, who apparently died as the result of the anesthetic. Hemorrhage was not present in either case, nor was there any infection nor suppression of urine; they simply went rapidly to pieces and died. These are the only two deaths, so that I have thus far lost two patients out of thirty-four. Goodfellow operates in the same simple manner. He has been longer in the field than any of us, and I believe he can report over seventy cases without a death, showing that perineal prostatectomy performed by a simple medium incision is certainly a very safe procedure.

NOTE:—The discussion on the papers of Drs. Syms, Goodfellow and Fuller will follow the last two papers next week.

HYDRASTIS.

SOME OF ITS THERAPEUTIC USES.*

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Many years ago, no one can say how many, the Indian tribes that roved over what is now our United States well knew the physical properties, the curative and medicinal virtues of a beautiful yellow, juicy, perennial root that grew in the rich shady woodland east of the Rocky Mountains. This root, when beaten up alone or with a little water, yielded a beautiful yellow fluid that would dye their clothing varying shades of yellow, according to concentration and mixture with other plant juices. They also knew that an infusion of this yellow root would cure many cases of ophthalmia and chronic leg ulcers. Indeed, the Cherokees were reported to cure cancers by it, but our present knowledge of the drug and disease practically disproves this idea. Like many of our medicinal preparations, what was then used empirically is now known practically to us as *hydrastis canadensis*.

Hydrastis canadensis has been used in almost every form from the infusion, powdered root, tincture, and active principles to the proprietary preparations, the composition or which is unknown to the profession and to be necessarily avoided if we would prescribe intelligently. Briefly stated, we have berberin and hydrastin as the two active principles, and from the latter we obtain hydrastinin. The fluid extract, tincture and glyceritum are the official preparations most used. *Hydrastis* is best recognized by its peculiar narcotic bitter taste and yellow color. The fluid extract probably represents the purest and most reliable preparation, and none but assayed preparations should be used. Many impure forms of *hydrastis* are on the market, but will not give the results that can be obtained from the pure drug.

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PHYSIOLOGIC ACTION.

Hydrastis seems to be most active on mucous membrane, particularly so on diseased mucous membrane. Its first effect is to stimulate glandular activity by virtue of its bitter taste and its slight local irritation of the gland moutins. When they are diseased and oversecretive in their action, it will restore tone, decrease the mucous secretion, and rapidly assist in restoring their physiologic processes. It improves the innervation to the gland, and by virtue of its systemic effects reduces the blood supply by contraction of the tissues surrounding the arterioles of the part. It is mildly antiseptic in type, and temporarily prevents the development of some of the lower forms of germ activity. It is slightly astringent, but should not strictly be classed as such. It acts mildly on a torpid liver, and stimulates a freer secretion of bile, and in large doses causes free watery evacuations of the bowels. By virtue of its action on contractile muscular tissue, it will often produce abortion in the pregnant uterus if not used with discretion. *Hydrastinin* is most active in this direction, but the pure drug must be used with care in pregnancy. With these few notes on some of its physiologic activities, it is easy to apply *hydrastis* in the treatment of diseased conditions.

THERAPEUTIC USES.

It has been my privilege to watch the action of *hydrastis* (the fluid extract) on many cases of chronic catarrhal conditions of the stomach and bowels, and particularly those forms of catarrh due to the effects of alcohol. The fluid extract was given alone and in combination. It is best to begin with one or two drops in water every two to four hours, and increase gradually to ten or fifteen drops at each dose according to the results. In those cases where a large quantity of mucus is vomited and expectorated and there is anorexia, there was a gradual reduction in symptoms in almost every case if a strict course of dietetics was enforced. One case of alcoholic catarrh and almost drug addiction occurs to me as worthy of report in this connection:

Patient.—Man, aged about 45, ordinarily sober and not addicted to the regular use of liquors.

History.—Digestion is normal until he overtaxes himself by prolonged mental work and worry. Under these conditions it was his custom to use that much-advertised and overestimated alcoholic catarrh remedy known as "Peruna." (It is mentioned only to be condemned.) This always excited his latent desire for drink and he used as much as one bottle in each twenty-four hours for about two days, when he developed the worst form of delirium tremens, accompanied by great mucous gastric catarrh, vomiting and inability to control himself.

Treatment.—The preliminary treatment was a hypodermic injection of three-quarters of a grain of morphin sulphate and atropin sulphate gr. 1/150 and in two or three hours 10 grains of calomel and soda, followed in six hours by Hunyadi Janos and effervescent Vichy. When the opiate effect began to wear away he was given:

R.	Ext. hydrastis can. fld.	m. iis	18
	Bismuthi subgallatis	gr. iis	18
	Glycerini acidi carbolic.	m. ss	03
	Spiritus chloroformi.	m. iv	24
	Elix. lactopeptin. q. s.	3i	4

M.
This dose was repeated every one-half to two hours. In addition he was given strychnia sulph. gr. 1/60 every two hours. His stimulant was cut off absolutely. In the first attack in which he called me no *hydrastis* was used and hypodermics had to be frequently repeated with very poor effect. At the suggestion of a fellow-practitioner *hydrastis* was used as above with the most remarkable results.

Result.—The mucus vomiting was reduced at the first dose and the desire for stimulant seemed to be controlled—in fact, stimulants were abhorred. If the hydrastis were withdrawn too soon the old appetite returned. Whenever he feels the least inclination for a drink or a return of the catarrhal condition he resumes his mixture of hydrastis with immediate benefit.

This is only one case in a number where it works well, but every person will not respond so quickly. If pushed and persisted in results may be expected in many cases, particularly the old catarrhal cases. It is quite noticeable that if pushed in large doses the bowels move very often for a few days, but this condition soon subsides for one of comparative regularity.

Many patients will come complaining of a poor appetite, slight nausea, sometimes vomiting catarrhal mucus and subacute indigestion. A proper counsel on diet and hygienic rules is of first importance; then give from one to six drops of fluid extract of hydrastis in water one hour before each meal and at bedtime. If there is no organic impairment of the mucous membrane decided results will follow. If a case of enterocolitis refuses to yield to ordinary treatment try small doses of hydrastis or hydrastinin at frequent intervals until results are obtained. It can be combined with other remedies.

For local use the glyceritum hydrastis is probably the best preparation. It is productive of excellent results in vaginitis and some forms of leucorrhœal discharges, but not in the real acute stages. It acts best in subacute or chronic conditions. Chronic or prolonged specific urethritis will benefit greatly by diluted solutions in injection or by direct application. A spray of the glyceritum hydrastis in three or four parts of water greatly reduces chronic nasal catarrh if systematically used. In fact, it is a remedy that, while not infallible, is too much neglected, and should not be overlooked for the newer materia medica. Most authorities recommend much larger doses of the various preparations than have been indicated in this paper, but my experience shows better results with small doses at frequent intervals. Large doses are liable to produce nausea, vomiting, abdominal discomfort or diarrhea.

Hydrastininæ hydrochloras in doses of from one-fourth to one grain is an excellent remedy to control menorrhagia, but is slow in its first effects. It has a more prolonged effect than ergot. It is also recommended in epistaxis, hœmoptysis, hæmatemesis and hæmaturia. It is a remedy that promises much for the future, and as reports of its use are published positive facts may be deduced. Do not use it in pregnant women except with the greatest caution, as it is liable to induce abortion.

Some prefer the use of hydrastin as representing the effective virtue of the drug. The impure hydrastin may do so, but the chemically pure hydrastin will not give the same effects as those obtained from the fluid extract. Pure hydrastin is given in doses of from one-eighth to one-third grain. While hydrastis is among the oldest remedies, it is probably too little used, too little understood, and is neglected. If this paper will serve to give an incentive to its further investigation and report it will accomplish the object of its production.

DISCUSSION.

DR. W. R. WHITE, Providence, R. I.—A number of years ago, when I was interne at the Rhode Island Hospital, an older physician, for whose opinion I had profound respect, told me that he was sure that hydrastis as a remedy was not sufficiently

appreciated by the profession. He said that in his own observation it had a certain influence on the mucous membrane that no other remedy had. I recalled what Dr. Wiggin had said when I listened to the recommendation of its use by Dr. Stewart. I would like to hear his experience with it in colitis and in subacute catarrhal conditions of the large intestine. It would also suggest its local use by injection in these cases. It is very valuable in the diseases of children. Of course its bitterness is an obstacle to its administration to young children. Can this be overcome by a suitable vehicle for administration?

DR. WILLIAM F. WAUGH, Chicago—*The Chemist and Druggist* called attention to the very inferior quality of the hydrastis that was coming to market. Owing to its collection by ignorant persons the drug supplied was almost entirely destitute of active principle. The editorial comment was that "this does not interest the manufacturers of galenics." This was an English paper and apparently no joke was intended. Hydrastin is a contractor of blood vessels and especially the small vessels, while berberin contracts the connective tissue. Where there is a relaxed condition of the uterine supports, it is interesting to observe its effects on the tissues; they remain contracted so that after several weeks instrumental support would not be needed. Dilated stomachs also will be contracted by the same remedy. This property also explains its value in proctitis and colitis. In very many mucous conditions we find relaxation of connective tissue for which we have a remedy in berberin.

DR. CLEMENT B. LOWE, Philadelphia—This is a case where we do not get the same results from an active principle as from the drug itself. Hydrastis has two principles, hydrastin and berberin; hydrastin is always white, its crystals are colorless, as also its salts. Berberin is yellow and its presence gives color to the eclectic preparation hydrastin, which consists both of hydrastin and berberin. Dr. Stewart says that he got better results from a good extract of the drug than he got from hydrastin. The purer the hydrastin the less it represents the fluid extract. This is an illustration which takes the ground from under the feet of those who claim that we can always get as good results from the active principles as from the drug itself. Morphin does not take the place of opium in practice, because there are a number of other active principles present in the drug that have decided physiologic effects.

DR. HEINRICH STERN, New York City—I wish to call attention to the cumulative effect of hydrastis canadensis. I have not seen an account of this in the works on materia medica and pharmacology which I have consulted. My observations are based on a very large number of cases of manifold pathology for which hydrastis canadensis, in the form of the fluid extract, had been prescribed. The elimination of hydrastis is quite rapid as a general rule, the kidney being the chief excreting organ. In case the latter is chronically affected, especially in cases of chronic interstitial nephritis, the elimination of hydrastis does not occur in the normal ratio and it accumulates to a greater or less extent in the organism. In cases of chronic parenchymatous nephritis its elimination is not materially interfered with, but other medicines, for instance rheum, tend to accumulate when the kidney is of the large white variety. The symptoms of hydrastis accumulation in contracted kidney are headache, vertigo, blurred vision, nausea, constipation, insensibility of terminal nerve filaments and convulsive disorders. I have come to the conclusion that every individual exhibiting a pronounced idiosyncrasy for hydrastis possesses contracted kidneys, even if this is but in the very first incipient stages. In this respect it may serve as a valuable diagnostic remedy. I consider it even diagnostic in cases where kidney epithelia in large amounts, casts and albumin are for long periods not detectable in the urine. The usual doses of ten and more drops of the fluid extract are much too large in the general run of cases, especially when treatment is started. It is not for us to determine how much of a medicine a patient can stand before toxic symptoms develop, but how little of it will relieve his pathologic symptoms. I usually

start the patient on from two to three drops of the fluid extract, increasing it slowly if the desired results are not obtained in this dose. I hardly ever administer more than five drops three or four times a day.

DR. W. B. STEWART—In the treatment of diseases of the stomach the administration of hydrastis, or the alkaloidal forms of it, has probably more of a contractile effect on the connective tissue, and particularly on the relaxed glands of these parts. I have had no experience with the local application, but can see no reason why, in case of ulcer of the rectum for instance, it should not have a good effect. It certainly acts well in catarrhal conditions of other parts, and it would do no harm to try it. Another question was about the administration of hydrastis. The bitterness is covered up to a certain extent by verba santa and similar preparations, but if you combine it with much of these to make it palatable, you will get more harm from the excipients than you will get good from the hydrastis. I generally prefer to give it in capsule. In the case of very young children capsules would be entirely impracticable. When listening to Dr. Waugh, who is my old teacher at college, I recalled a statement by him in 1888 to the class, when lecturing on catarrhal conditions. He said: "Remember, gentlemen, in catarrhal conditions, hydrastis is the sheet anchor." In reply to Dr. Lowe I would state that I have not used the impure preparation of hydrastin, but in all cases have used the chemically pure alkaloid, and was very glad to hear Dr. Stern state that there are cumulative effects, and that in interstitial nephritis there is special danger of cumulative action, which adds to our stock of knowledge of this drug. I agree with the recommendation to use small doses at first and gradually increase them, watching the effect. If you do not get good effects you may suspect some trouble in the kidney. Has Dr. Boardman Reed had any experience in the use of hydrastin in diseases of the stomach?

DR. BOARDMAN REED, Philadelphia—I have had no personal experience with hydrastis in treating diseases of the stomach. When I pursued my special studies of stomach diseases in Germany they did not use it there for this purpose, and my attention was not directed to it. In my former general practice I found hydrastinin very satisfactory in treating uterine hemorrhage. In other conditions I have used hydrastis in small doses without any decided results. In testing any such remedy in stomach cases test meals should be given from time to time and the contents examined to determine the effects. In the future, when I see cases of gastric catarrh that are difficult to control, I shall bear hydrastis in mind and make trials of it under exact conditions. If gastric catarrh can be greatly relieved by small doses of hydrastis, it will be a very good thing to know.

HOW TO PRODUCE MILK FOR INFANT FEEDING.*

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Many infants must be nourished artificially. The reasons for this are plain. Sometimes the mother is overworked, insufficiently nourished, harassed by a vicious husband and many other children, often incompetent by her own unfortunate temper or a vicious appetite and indulgence or a vagrant desire for amusements, sometimes by an inability to secrete milk. The business of properly nourishing an infant is a serious one, and to be properly accomplished must be attended to with an intense sense of duty. The mother must be healthy, love her child, and not nurse it when she is seriously disturbed, either mentally or physically.

I was called to see an infant in a severe convulsion.

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I found that the mother was very solicitous and affectionate. She had been so careful of her child that she did not even allow it to have a drink of water, feeling confident that she herself could fulfill all these requirements. So I said, "Have you any trouble in the family?" She answered, "No." "Well," said I, "surely if you have told me the truth about your feeding the baby, you are not truthful about everything being right in the house." Then, in a fit of crying, she said: "My husband's brother has been here disputing two days about a mortgage." So I said: "Stop nursing your baby until the mortgage business is settled." She did so, and the child recovered promptly. After the brother went away, the mother resumed nursing her child, and there was no further trouble to my knowledge.

It would be a long study to ascertain what effect butter and cheese from diseased cows, improperly fed, housed or cared for, has on the human being consuming these articles of diet. These foods are mixed with many other articles, and it would be difficult to say which was the cause when one's food disagrees with them, but I think with a bottle-fed baby using only milk and water, a search for the source of offense when the baby's stomach or bowels are affected, is very simple.

It is easier to control cows than women. Human mothers are often emotional, excitable, indiscreet, sometimes hysterical, and not always able to control themselves. A dairyman understanding that these conditions can affect milk, must also understand the necessity of controlling his cows. When a cow is in heat or otherwise gets disturbed or hurt, the milk can be thrown away and the excited cow can be kept from influencing the other members of the herd. From years of experience and observation, I feel safe in affirming that the accountable party to the individual in the cradle is the man who is responsible for the production of the milk when the foot that rocks the cradle is not the mater who furnishes the nourishment for the baby. And, therefore, dairymen who are supplying milk for infants' food are assuming a terrible responsibility. There are thousands of infants dying yearly from stomach and intestinal troubles who are fed on the milk sent to the cities and villages by dairymen surrounding the urban and interurban communities, and I am sure that the milkmen supplying these artificially fed infants are responsible for a large percentage of the deaths, and that these infants are killed by carelessness on the part of the dairymen supplying them with their daily food.

In the year 1882 I had charge of the country home of the New York Infant Asylum, and during that year I had 518 inmates, with only 26 deaths, for the entire year. Of these deaths, 5 were artificially fed infants, and 13 were breast fed; the others were weaned. There was not a single case of acute intestinal disturbance. I think that this percentage, a fraction above 5 per cent. of a death rate in an infant institution, is remarkable, and the low mortality was simply due to the fact that I had charge of the cows furnishing the milk for the artificially fed. It seems to me that we will never reach the proper stage of producing milk for infants until we separate the infant food dairy from the commercial dairy. The agricultural colleges and journals devoted to dairying interests are teaching how to raise an abundance of milk at the cheapest possible outlay on the part of the dairymen. The percentage of fats