R. Phenol (acidi carbolici)	gr. xx-xl	1 30-2.60
Lanolin	3i	30
Boro-glycerin	3iv	15
Unguenti aquæ rosæ	3iii	90

M.

This is applied with the palms of the hands and gently rubbed in until about all is absorbed.

A mixture of camphor and chloral is a very efficient antipruritic, made thus:

R. Chloral hydrate	
Camphor gum, of each	3ss-3i 2-4
Rub together until liquid and add:	
Compound lanolin ointment (as above)	3i 30

M. Sig.: To be gently rubbed in.

If there are any raw surfaces this will sting considerably, but on the unbroken skin it is very comfortable and allays itching greatly.

Many skins do better without any greasy application, and the glycerite of starch can be substituted in the above ointments for the fatty base.

Tar and the tarry preparations, oil of cade and oleum rusci, are also valuable antipruritic remedies, and may be freely used without danger of absorption.

Much more could be given in this same line of local therapeutics, but the object of this paper is not to detail the method of treating itching; it is rather to direct serious attention to the many causes of itching and to the necessity of studying all cases very carefully, and by accurately determining and reaching the cause to give relief to the symptom, itching.

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DISCUSSION.

DR. W. T. CORLETT, Cleveland, Or., said that he understood Dr. Bulkley to say that true prurigo is a very rare affection in this country. Dr. Corlett said that he has seen several typical cases of prurigo, as described by Hebra, and, so far as he has been able to observe them in Cleveland and elsewhere, he believes that, if less common, they are quite as typical here as in Vienna. Dr. Zeisler, some years ago, called attention to cases of prurigo seen in Chicago, which, Dr. Corlett thought, were said to be like those observed abroad.

DR. GEORGE T. JACKSON, New York City, remarked that a very severe type of itching is not infrequent at the menopause. Senile pruritus is due not only to changes in the nerves of the skin, but to changes in the skin itself. It becomes thin and dry, and there is an absence of the natural oil, probably due to changes in the sweat glands. These patients sometimes find great relief in simply oiling the skin with cocoa butter.

DR. L. DUNCAN BULKLEY, New York City, said that, in his experience, prurigo differs in different parts of the country. Many cases of supposed prurigo in the Skin and Cancer Hospital eventually prove to be urticaria. Dr. Bulkley said that he has used aspirin, which is supposed to be an anti-acid, and that he agrees in regard to the value of oily applications in certain forms of pruritus. Some of these people bathe too frequently and thus remove the natural oil of the skin; some patients say that their itching is much less troublesome while they are traveling and deprived of their usual baths.

Prevention of Dust.—The Stuttgart Medical Society recently appointed a committee to discuss the question of the prevention of dust and the advisability of a municipal ordinance forbidding the trailing of skirts on the street. The committee report referred to this as unessential, as the automobiles and tramways are responsible for whirling up most of the dust. If the streets are kept carefully cleaned, the report continued, there will be no dust to be set whirling, consequently the measures advised are, prevention of spitting on the street, selection of pavements only after study of their dust producing properties, and warning notices in regard to the dangers of dust to be placarded by the board of health.

INDICATIONS FOR THE EMPLOYMENT OF ADRENALIN CHLORID, IN CONJUNC- TION WITH COCAIN, IN OPER- ATIONS ON THE EYE.*

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For several years, as a matter of routine, I have been employing adrenalin chlorid in conjunction with cocain in many operations on the eye. At first this was done solely to lessen hemorrhage, but for some time I have used it not only for this purpose but because it soon became evident that through its action the anesthetic effect of the cocain was definitely increased.

In operations on the cornea and conjunctiva the anesthesia produced by cocain is, as a rule, so complete as to leave little to be desired, but this can not be said of certain other operations, notably those on the ocular muscles, on the lacrimal apparatus, and those done for the cure of chalazion or other tarsal cysts. Here, where much is to be desired in the direction of more perfect anesthesia, adrenalin has proved of undoubted value.

That adrenalin used in conjunction with cocain facilitates, in a mechanical sense, the passage of probes through the occluded lachrymal duct has not been evident to me, but that it renders the introduction of the probes, as well as the slitting of the canaliculus, less painful is hardly open to question. There can be as little question, I think, that chalazion operations in like manner are made much more tolerable than are those in which cocain only is used.

In tenotomies of the ocular muscles the hemostatic action of adrenalin is of great advantage, though it must be confessed that it does not always as effectually control hemorrhage from the divided tendon as it does from the conjunctival incision. In addition to this effect, however, I am sure that it makes the operation—especially the cutting of the tendon and the manipulations with the strabismus hook—decidedly less of a tax upon the fortitude of the patient.

In operations involving the making of a corneal section, especially cataract extractions and iridectomies, with the exception of iridectomy done during an attack of inflammatory glaucoma, experience has taught me to be rather chary in using adrenalin. For, though I have employed it several times in cataract extraction with no ill effect, I have felt more than once that the operation was complicated by its use. Particularly was this true of one case in which, immediately after the completion of the section, the cornea lost its transparency to a remarkable degree and collapsed in crater-like fashion, the further steps of the operation thereby being rendered decidedly more difficult. In such operations, too, there seems to be no definite reasons for employing adrenalin, since the anesthesia from cocain alone is usually satisfactory.

This last observation does not apply, however, to iridectomies performed for the control of inflammatory glaucoma. Here, as is well known, the anesthesia from cocain is often far from satisfactory. For this reason, and because, moreover, the astringent effect of adrenalin is decidedly helpful, I have preferred to use it under such circumstances. It is interesting to note that Pro-

*Read in the Section on Ophthalmology of the American Medical Association at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

fessor Fuchs, of Vienna, has been led by his experience to a similar conclusion.

In operations for pterygium, adrenalin seems to me to be contraindicated, because its blanching effect renders the outlines of the growth difficult of recognition, and, besides, the anesthesia from cocain alone is all that could be wished for.

Dr. J. Elliott Colburn¹ has pointed out another valuable indication for the use of adrenalin in conjunction with cocain. In several cases of ocular traumatism the instillation of adrenalin, by checking hemorrhage, greatly facilitated the detection and removal of foreign bodies which were imbedded in the superficial structures of the eye.

Although I have usually employed adrenalin in full strength (1:1000 solution), and, especially in probing the lachrymal duct, have applied it to the same eye repeatedly and freely, I have never seen any untoward consequences—except such as I have referred to—from its action. I have also found that its sterilization, by brief boiling in a Florence flask, in nowise impairs its efficiency.

There seems to be good authority for the claim that the toxicity of cocain is markedly lessened through the action of adrenalin, but in the eye surgery this is not a matter with which we are much concerned.

In conclusion, I may add that as a therapeutic agent, *per se*, in the treatment of inflammatory conditions of the eye adrenalin in my hands has not proved efficacious.

DISCUSSION.

DR. S. L. ZIEGLER, Philadelphia, said that the conjunctival ischemia caused by adrenalin prevents the absorption of cocain, and thus causes the anesthetic to act more efficiently on the peripheral nerve filaments in the superficial tissues. This enhances the anesthetic value and at the same time prevents the possibility of cocain toxicity, which, although rare, has occurred once in his practice. While its action is most excellent on mucous surfaces, it is occasionally followed by supuration when injected into the tissues of the lid. He has seen one case of this kind and another where cellulitis followed its use. It may be instilled freely in tear duct cases and in minor operations. It often proves most excellent in iridectomy for glaucoma, and in Saemisch incision, where the anterior segment of the eye is liable to become greatly engorged after the opening of the eyeball is completed. Here it may have slight analgesic effects by preventing this filling up of the vessels. Its effect is manifested somewhat superficially, and therefore incision into the deeper structures is often followed by hemorrhage, as in tenotomies and the excision of small growths. Used in weaker solutions it often relieves the congestion of conjunctivitis, and other mild disturbances. The strength is preferably very dilute, 1 to 16, which is about one dram of the normal strength (1 to 1,000), added to two ounces of water. The long continued use of adrenalin may result in painful ocular irritation, but the weaker solutions do not cause this vascular relaxation so markedly, although this possibility should be borne in mind. Dr. Ziegler said that recently he had been substituting suprarenalin for adrenalin in eye work. It appears to be less liable to septic decomposition, and less irritative to the eye. Suprarenalin is made from the fresh gland and oxidizes more slowly than adrenalin, which is made from the dried gland. Adrenalin, however, acts better in the nose than in the eye, although it is somewhat more irritating to the sensitive tissues of that organ.

DR. C. A. VEASEY, Philadelphia, said that while he fully agrees with Dr. Theobald, he wished to warn against the too free use of the drug in the eyes of patients affected with arteriosclerosis. Three times he has had the misfortune to see the anterior chamber fill with blood shortly after instilla-

tion of solutions much weaker than those recommended; if such severe hemorrhage can be produced in the anterior segment of the eyeball, there is no reason why it may not also be produced in the posterior segment. The drug is a good one, and for several years he has been employing it as Dr. Theobald recommends, and it is certainly of the greatest value when it is necessary to anesthetize a markedly inflamed eyeball such as exists in inflammatory glaucoma; but he is also sure that there is a certain class of elderly patients with blood vessels more or less brittle in whose eyes its use should be extremely restricted, if used at all.

DR. JOHN E. WEEKS, New York City, said that he had been using adrenalin for a number of years—in fact, he used the infusion before the adrenalin chlorid was on the market—and he still uses it extensively. He uses it as a routine measure in cataract extractions and has done so for several years, and has yet to see any bad results from its use as he employs it. The cocain anesthesia is commenced some time before the adrenalin is instilled. A solution of 1 to 1,000 adrenalin chlorid is used, one or two drops instilled before the operation. He does not permit its employment for any length of time before commencing the operation, nor does he use it after the operation is begun. He uses it indiscriminately in young or old. One operation in which he does not employ it is that for pterygium, because in this condition it reduces the volume of the pterygium too much. He has found that its continued use as a therapeutic measure is deleterious. There is a relaxation of the blood vessels of the conjunctiva following its continued use even in greatly reduced strengths; there is a dilatation of the vessels and the production of thickening and roughening of the conjunctiva which is not desirable. In not a few cases he has had to tell the patient not to use the collyria that have been prescribed by his colleagues because of the presence of adrenalin. The irritation of the conjunctiva for which it has been prescribed continued and on discontinuing the adrenalin recovery took place promptly. It is a valuable remedy in the treatment of disease of the tear duct.

DR. GEORGE H. PRICE, Nashville, Tenn., said that if the remedy is used to prevent hemorrhage it should precede the use of cocain, and consequently when the object is to reduce the amount of hemorrhage, it is best to use the adrenalin first. It also limits the action of the cocain as to space; prevents too free absorption and carrying away the anesthetic to adjacent tissues. If used in the strength of 1 to 1,000, it must be applied to the point where the effect is desired. If simply dropped into the eye in this strength, and repeated frequently at short intervals, the patient gets a peculiar, dull, heavy pain in that eye, which persists until relaxation of the vessels takes place. In its use about the lachrymal apparatus, he said, it brings about a shrinkage more or less of the tissues, but it should be applied directly to the parts, the tear duct, and not simply dropped into the eye. He uses it when he operates in cases of pterygium, because it reduces the hemorrhage, especially in those fleshy varieties. If used prior to the cocain it reduces liability of hemorrhage and may limit internal hemorrhage. In those conditions where we wish to bring about a lessened amount of blood in the iris tissue itself, he has found it an excellent remedy. He rarely uses it stronger than 1 to 8 in 10,000, except when he wants to use it about the lachrymal apparatus to limit the action of cocain.

DR. SAMUEL THEOBALD, Baltimore, said that he has used adrenalin in the strength of 1 to 1,000 freely. The plan he follows is to instil cocain, then adrenalin, then cocain, etc. Possibly he has used it too freely. He said that the suggestion that it should not be begun too early is a good one and he will bear it in mind. He has never known pain to follow its use. In regard to the added anesthesia from adrenalin, it is in tenotomies that this is especially marked. The conjunctival cutting and the snipping of the tendon are commonly not painful, but the manipulations with the hook are what is apt to produce pain, and this is decidedly lessened by the addition of the adrenalin.

Medical Education and Psychiatry.—It is little short of calamitous that American medical education has not equipped the general practitioners to recognize the early symptoms of insanity.—Frank Billings, M.D., in *Charities and the Commons*.

¹ Clin. Rev., July, 1901.