In some cases when the granulations are sufficiently advanced, it is advisable to cover them with small deep grafts, in order to give a more stable and quicker healing. It might have been better to have grafted more of this series.

The cases seen soon after the accident give the best results as far as increased length is concerned.

Building new tissue on the end of the stump is slow, but in the end it will preserve the bone which remains, and cover it; and will also often add materially to the length of the stump. If the joint is uninvolved, even a short bit of terminal phalangeal bone will form the basis for a shortened terminal phalanx, which may be voluntarily extended and flexed, and can be used nearly as well as an intact terminal phalanx.

From the standpoint of function, increased length and improved appearance, the results have been better than with any other method with which I am familiar.

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SUBCONJUNCTIVAL INJECTIONS OF SALVARSANIZED SERUM IN OCULAR SYPHILIS

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In a paper published about a year ago, Dr. W. H. Hough¹ made the following statement:

That the organisms have not been found as a rule near the blood vessels, but generally in the gray matter at some distance from them, and that salvarsan appears to have a greater predilection for most of the other tissues of the body than it has for nerve tissue, as Uhlmann has shown in his studies of the neurotropic action of this chemical, may explain in part the inefficiency of salvarsan administered intravenously in the treatment of these conditions.

The close analogy of the ocular circulation to that of the brain suggested to me a reason for the pathology of ocular syphilis that had not heretofore, to my knowledge, been applied in ocular therapeutics. Because of the terminal feature of the ocular circulation, the spirochetes were able to take such a position in the eye as to protect themselves from the blood stream and thus escape, as far as possible, the power of the blood and of measures therapeutically applied. I thought that if salvarsan could be directly brought into contact with the organism, the chances for cure would be much greater. It had been previously shown by experiment that the injection of solutions of salvarsan into the spinal canal had been productive of destructive changes, and it was inferred that the use of such solutions in the eye was inadmissible. The marked benefit and absence of untoward results that followed the use of salvarsanized serum in cerebro-spinal use determined me to apply it subconjunctivally in ocular syphilis.

CASE 1.—The first case was that of a chorioretinitis with pigment proliferation in the macular region.

R. P., chauffeur, aged 28, had an initial sore about five years before admission to the George Washington Hospital in November, 1913. Two years previous to admission, while living in the country, he had had an inflammation in the right eye that practically destroyed vision in that eye. It was a specific chorioretinitis, central, and destroyed the entire

macular region. On admission he presented a central chorioretinitis of the left eye with beginning pigment proliferation. Vision was 6/60. An immediate Wassermann was double plus. The patient was given salvarsan intravenously and Hough prepared serum, four doses of which were given subconjunctivally at intervals of two days. He left the hospital in two weeks from admission with vision 6/12 plus, the pigment proliferation arrested and diminished and the general inflammatory reaction altogether subsided. He was seen several months later and vision was then 6/9 in that eye.

CASE 2.—The second case was a child, Mary A., aged 6, with an interstitial keratitis. In this case congenital syphilis was diagnosed, as the mother had previously been treated for nasal syphilis in the same hospital service. She was first treated early in November by two subconjunctival injections of serum. Being a very refractory child, the mother not being able to control her, serum was given to the mother and used by dropping directly into the eye. This was carried on without difficulty and seemed to produce good results, the infiltration clearing quite rapidly, and at the end of four weeks was but faintly seen on oblique illumination. The mother then discontinued her visits, so that the final outcome is not known; but the rapid clearing of the eye in this case gave a fair presumption that the serum is much more rapid in its effects than the old methods of treating interstitial keratitis.

CASE 3.—A third case, the records of which cannot be found, was an old disseminated choroiditis, in which the patient had had several doses of salvarsan with but little improvement in vision. Three or four doses of serum were given, which improved vision one line. The patient then drifted away from the dispensary service, so that no further information could be obtained.

An important consideration in conducting these tests was to establish the advisability of using the serum subconjunctivally. It was found that there was no more reaction from the serum than from ordinary salt injections: that it was rapidly absorbed and did not cause any great pain or inconvenience. The marked improvement which the injections seemed to promise determined me to present the matter to my colleagues of the Washington Society of Ophthalmologists, Dec. 19, 1913. Following this presentation, Lamb took up the work in his service at the Freedman's Hospital, rich in clinical material of this character. From the report of his experiences² the following quotations are selected:

A third case of double plastic iridocyclitis of both eyes had been treated for three weeks when I saw him. The right eye had posterior synechiae; the left eye had marked posterior synechiae with a gumma, which was a very, very large one. The first injection cleared the right eye of the posterior synechiae, the left was partially benefited and the second and third injections improved the left eye, which finally healed, inflammation having subsided, with adhesions between that portion of the iris which had been gummatous and the anterior capsule of the lens.

He mentions a case of interstitial keratitis which was cured within three and one half months, whereas other methods take a year or more. He also says, "These cases, which resisted all the drastic measures, including the injection of salvarsan, should be sufficient to illustrate the efficacy of the treatment." Dr. A. H. Kimball has used the treatment on a number of patients at the Episcopal Hospital with uniformly good results. No report of his experiences has been published.

In the discussion following Lamb's paper before the District of Columbia Medical Society, Hough stated that the researches of Ehrlich and others have shown

1. Hough, W. H.: Intraspinal Injection of Salvarsanized Serum in the Treatment of Syphilis of the Nervous System, Including Tabes and Paresis, *THE JOURNAL A. M. A.*, Jan. 17, 1914, p. 183.

2. Lamb: *Washington Med. Assn.*, March, 1915.

that salvarsanized serum has a distinct spirocheta-cidal power, a power greater than that exercised by salvarsan itself.

It is believed from the work that has been done that the procedure is safe and entirely justifiable logically; that it brings the serum into direct contact with the location of deposit of the spirochetes in the eye, and therefore marks a step forward in ocular therapeutics.

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HYDROTHERAPY IN THE TREATMENT OF MENTAL DISEASES

ITS FORMS, INDICATIONS, CONTRAINDICATIONS AND
UNTOWARD EFFECTS

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The forms of hydrotherapy available are ordinary sponging (cold or tepid), hot packs, cold packs, enteroclysis, hypodermoclysis and the free use of water internally. Hot packs and cold packs are especially advantageous in those conditions in which the tubs, cabinets and sprays are contraindicated. They are exceedingly useful in the extramural treatment of the insane, and possess unusual advantages in the intramural treatment of the various psychoses. The free use of water by mouth is indicated in all forms of insanity. Enteroclyses as well as hypodermoclyses are especially advantageous in the treatment of all cases showing exhaustion, excitement or depression. Swimming pools are useful for exercise and diversion.

METHODS OF ADMINISTRATION

Many hospitals overlook the free administration of drinking water in the treatment of these diseases. In order that the patient may receive the necessary amount of water, the physician in charge should prescribe the amount desired, just as he would the use of drugs. Every physician who graduates from a recognized school at this epoch is certainly familiar with the application of cold and hot packs, the time and length of application depending on the physical condition of the patient, the effect desired and results obtained.

One should be very guarded as to the class of insane for which he prescribes cabinet sweats. This form of treatment is indicated primarily in all those cases which show signs of autointoxication, regardless of their psychoses. The contraindications are marked physical deterioration, advanced circulatory disturbances, renal diseases, etc., as well as a disturbed condition of the patient.

This treatment should always be given by trained nurses or skilled attendants, well versed in the operation of the cabinets as well as in the interpretation of physical symptoms. Aromatic spirit of ammonia should be close at hand, an ice cap applied to the head, and water given freely during the time of sweating. Perspiration usually becomes profuse at the expiration of about ten minutes, and here the patients should pass immediately into the shower for subsequent sprays in order to avoid catching cold. Cabinets should be well protected, all heat pipes or frame work properly protected, and doors to the cabinets should be such that they can be opened quickly. The neck should be well

covered, and a large towel should enclose the patient's lower body in order that the procedure may be done as modestly as possible.

CONTINUOUS BATHS

In speaking of continuous baths one naturally infers the warm bath, a bath which does not drop below 88 or exceed 100 F. I know of no condition other than physical impairment which would prevent the use of continuous baths; they can be used in cases of depression as well as marked excitement. Aside from their therapeutic effect they have a moral influence over certain incorrigible patients. Incorrigibility itself is not an indication. The bath may be administered in several forms; tubs may have separate regulators, but preferably, one central stand should be the control. Patients may be given the freedom of the bath or they may be restrained, depending on the nature of the case as well as the therapeutic result desired. To my mind, if the nonrestraint form of bath is to be used, it would be preferable to have swimming pools erected for this purpose whereby the patient can have freedom of movement and mental diversion as well as freedom from restraint. The continuous tubs are to be used for cases requiring active therapeutic medication.

The majority of patients for whom the baths are prescribed in the Philadelphia Hospital for the Insane usually receive the restraint form of treatment, because they are usually of the most violent classes, in which a quick relaxation is desired. This restraint may be accomplished by a swinging hammock suspended in the tub with an ordinary restraining sheet superimposed and the head well protected with a rubber ring, with the patient sufficiently high in the tub to prevent strangling. We have found that in placing the patient in the tub, if he is given a dose of Epsom salt, a relaxation is quickly obtained; a simple bandage applied to the eyes and ears to shut out external stimulation also has given good results in this particular class of cases.

Our experience teaches us that a bath of short duration at frequent intervals has more advantages than a prolonged bath of days or weeks.

UNTOWARD EFFECTS

The effects of tub baths at times are disastrous, particularly if the nurse in charge is derelict in her duties, or the hot water regulators should become unmanageable. The most unfavorable which we have had in this institution were eczema, particularly if the patients were given a long period of continuous treatment. Other serious effects were heat stroke and heat exhaustion.

When the plant was first installed, a few of the patients developed an eczematous condition of the skin. Within the past five years we have had no untoward results except in two cases which are here briefly enumerated:

CASE 1.—A patient was admitted to the hospital suffering from insanity in which there was marked psychomotor restlessness; all means to secure relaxation had failed and the tub bath was prescribed; at the time he was placed in the tub his physical condition was good and there were no contraindications; the attendant in charge of the patient was skilled in his work. Suddenly, during the course of the treatment (after only a few hours), the patient became pale and prostrated; he was immediately removed from the tub, placed in the ward and a physician and graduate nurse summoned, who rendered all medication possible. The patient's temperature was not elevated abnormally, the pulse was rapid.