in regard to the lumbar puncture. Lumbar puncture ought to settle the diagnosis as to tuberculous meningitis. He mentioned one case in which practically no fluid could be obtained in the lower portion of the spine; on making the puncture from the upper portion as much as two ounces was withdrawn and this was repeated to take off the pressure. He said that Dr. Morse's paper is interesting in showing the variations from the standard set by the text-books. This has been observed in commission work. It seemed impossible in putting on a number of new inspectors to direct them to judge a case by a certain standard.

The lumbar puncture is also good for another purpose; for instance, in the case referred to an abscess developed in the vault of the pharynx. It seems to Dr. Northrup a good routine plan to do lumbar puncture to give some knowledge of the prognosis.

He said that during the epidemic in New York he had one patient who was sick for 155 days. She was a girl in splendid physical condition, a basket-ball player, and weighed about 120 pounds. In the last days of her illness she scarcely weighed forty pounds. This emaciation seems to Dr. Northrup to be one of the marked features.

DR. C. G. KERLEY, New York City, stated that Dr. Morse's observations coincide with his own. He agrees with Dr. Morse in regard to the value of lumbar puncture in the differential diagnosis of tubercular and spinal meningitis. Routine lumbar puncture is also valuable in another respect; for instance, it is very embarrassing for a man to make a diagnosis of tubercular meningitis, cerebral or spinal meningitis, and have the child get well after the administration of a dose of castor oil. It is bad for the practitioner and worse for the consultant. In recent examinations for the tubercle bacillus twelve cases have shown this bacillus in the meshwork of fibrin which sometimes forms in the spinal fluid.

DR. ARTHUR W. FAIRBANKS, Boston, mentioned two cases, one on account of the peculiar character of the onset, the other because of the peculiar postmortem condition. Both were cases of tuberculous meningitis in children 6 years of age. The first patient was a girl, brought to him because of uncontrollable disobedience, formerly having been a docile child. The condition began with having a temperature of about 101. The mind was perfectly clear, there being nothing but the lack of the former docility. On attempting to examine her the nearest approach was resisted with the greatest ill temper and attempts to scratch and bite. In striking contrast to this was the change which occurred eight days before death, when all resistance ceased and she allowed him to examine her with perfect freedom. Sensation was diminished. Her expression was that of having just wakened from a dream, and this same expression Dr. Fairbanks has seen in two or three other cases. She had internal strabismus in the right eye and had previously had it in the left. The pulse was at first irregular, but became normal. There was sinking away of the abdomen. There was no motor paralysis, except that of the abdominal muscles. On spinal puncture the clot in clear fluid did not reveal tubercle bacilli. She had some weakness in one extremity. The other case had been received in the ear ward of the hospital for otitis. There was improvement and transference was made to the medical ward. Tremor was noticed in each extremity. The discharge from the ear ceased completely. There was no twitching or other motor disturbance. This condition was promptly followed by ataxia and the child became unable to walk. The first thought was of an abscess in the cerebellum from the trouble in the ear, but the trouble had cleared up. During the last twenty-four hours the psychical condition changed. Dullness came over the child and it could not be prevented from falling asleep. The pulse suddenly dropped from 150 to 75, while the temperature steadily rose. Puncture of the spinal canal was made and the fluid showed a fine clot in the clear fluid. This illustrates Dr. Morse's point relative to the relief of symptoms. The child immediately brightened up, though it died soon after. The entire surface of the cerebellum was covered with tubercles and section of the vermiform showed complete caseation. The chief symptoms were ataxia and tremor, dullness of intellect, rise of temperature and lowered pulse.

DR. EDWIN E. GRAHAM, Philadelphia, said that in the differential diagnosis of tubercular and spinal meningitis he thinks almost all physicians are agreed on the value of lumbar puncture. Of course, the non-tubercular form may become the tubercular form. Recently he saw that occur in the wards of the Philadelphia Hospital. The child had been in the hospital for a non-tubercular meningitis for several months, and had been under observation in another institution for about four months. A few weeks before death, fluid removed by lumbar puncture showed the condition to have become tubercular and this was proved at autopsy. There must be a borderline where these two conditions meet, where the non-tubercular variety may become tubercular.

DR. WILLIAM J. BUTLER, Chicago, said that Dr. Morse's careful clinical study has presented the differences between a meningitis of infancy and that of later childhood so clearly that it hardly needs discussion. In the diagnosis of meningitis in infancy, however, the rigid neck, retracted neck, Kernig's sign and Babinski's sign all seem to have a minor place, whereas they are almost essential in the diagnosis of meningitis in adult life. Concerning the differentiation of tubercular and cerebrospinal meningitis, the diagnosis seems practically impossible, unless the meningococcus is found in the spinal fluid. In so far as the blood findings are concerned, Dr. Butler's experience is that they are practically valueless so far as leucocytosis is concerned, although he is in favor of the lumbar puncture because in the tubercular form one will find as high as 30,000 leucocytes present.

DR. J. L. MORSE said that no differential count of white corpuscles was made in the blood. Kernig's sign was only examined for daily; it may have been present at other times of the day when not tested. He feels that it is of comparatively little consequence. Concerning the leucocyte count and a differential diagnosis, of course, a high leucocyte count does not rule out tubercular meningitis, but he thinks that a leucocyte count almost rules it out. In regard to meningitis and the lumbar puncture, he said that at the clinic at the Infants' Hospital lumbar puncture will be done and the various fluids of spinal meningitis will be shown.

THERAPEUTIC VALUE OF CHRYSOPHANIC ACID IN DERMATOLOGY.*

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I desire to present in this paper some clinical observations and suggestions as to the value of chrysophanic acid as an effectual therapeutic remedy locally in certain superficial parasitic skin diseases.

Chrysophanic acid is obtained from "Goa powder" which is found in the heart wood or cavities formed by decay in the wood of *"Andira Araroba,"* a tree found in Brazil. It is also found in Rhein, U. S. P., and is produced by the oxidation of Chrysarobinum, U. S. P., a constituent of Goa powder. Lieberman proved that in the latter the acid was very largely present and easily transformed by oxidation. It is a pale orange yellow microcrystallin powder, odorless and tasteless and which, on exposure, to air, turns a brownish yellow color. The remedy has long been used in Brazil, and has spread through Portuguese commerce to India and the East, while its general European and American employment is comparatively recent in certain varieties of skin disease.

It was first noticed in 1876, in London, England, in Fox's "Skin Diseases of India," and then since then it has at times been favorably endorsed as a dermatological remedy.

* Read in the Section on Cutaneous Medicine and Surgery of the American Medical Association at the Fifty-seventh Annual Session, June, 1906.

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In some 65 cases of psoriasis it exerts a specific power and is therapeutically of great value. The following case reports illustrate its potency:

CASE 1.—Mr. A., aged 28, an active business man, a native of Connecticut, consulted me Jan. 28, 1906.

Family History.—Negative, except that two cousins had had erysipelas.

Personal History.—He had had no illness since childhood, except some infantile disease, but four years ago he noticed a series of patches over the extensor surface of both limbs, the tips of both elbows and both knees, and a few weeks later patches were found on the scalp and trunk. These were dry, red, primarily rounded in character, and covered with imbricated silvery adherent scales, much more copious on the scalp and forehead, but to a lesser extent on the extremities. He gave a history of treatment internally, but with little results, from arsenic, mercury and other special remedies.

Physical Examination.—Height, 5 feet, 10¾ inches; weight, 119 lbs.; temperature was 98.5; pulse, 74; respiration, 17. Lungs, liver, heart, spleen and kidneys were normal.

Treatment.—Believing that local remedies would be more effectual by removing and preventing the renewal of the scales, on January 28, I placed him on internally Pil. phosphori 1/30 grain, three times a day, and locally Unguentum chrysarobini, U. S. P., applied twice a day (10 per cent.) continued with semi-weekly observations until March 1, when pain in the epigastrium with copious diarrhea became constant, showing the maximum effect of the phosphorus, and this was discontinued. Then an ointment containing 20 grains of chyrsarobin to the ounce of benzoated lard, was ordered.

Course of the Disease.—On March 8 there was some improvement. Treatment was continued. March 15: There was marked improvement, only traces of the eruption were found on the abdomen and lower extremities. Treatment was continued. March 22: He had now steadily used the ointment since March 1. There were no traces of the eruption found in any portion of the body except faint stains on the right knee. March 29: There were no traces whatever of the eruption and he had no further trouble. The dark, yellow stains had disappeared, following the application locally of weak solutions of chlorinated lime, morning and night.

My conclusions were that after a certain time the antagonism of phosphorus of psoriasis finds its equilibrium, and that the antagonism in question, although real, nevertheless had a limit which falls short of a complete cure, but that the specific value of the acid in psoriasis seems to be now unquestioned. The following will illustrate its value in 114 cases of *eczema:*

CASE 2.—Mr. B., aged 18, a native of France, consulted me Nov. 28, 1905.

Family History.—Negative, except that two sisters had the same eczema.

Personal History.—The patient has always been well since childhood, but has suffered from eczema for the past nine years with no benefit from any plan of treatment.

Physicial Examination.—Lungs, liver, heart, spleen and kidneys were normal; height 5 ft. 8¾ inches; weight, 117 lbs.; pulse was 69; temperature, 98.5; respiration, 17. Eruptions were present on the scalp, face, trunk and lower limbs.

Treatment.—The patient was placed on proper diet and the bowels were kept freely open with tonics, which constituted the only internal remedy. Unguentum chrysarobini, xx grains to the ounce of benzoated lard, was ordered applied locally twice a day.

Course of Disease.—On December 1 there was some improvement, but I ordered the ointment applied morning, noon and night. December 15: The eruption had almost disappeared; treatment was continued. December 20: The patient presented himself with all eruption absent.

It is remarkable that what seems to be no more than a common irritant should possess so peculiar specific a value. Some who are opposed to its use say that it produces an eczema, and indeed it does, but in this very fact resides its virtue. I have used it in children with excellent results.

In Herpes circinatus it is also of value. The remedy was effectual in some 35 cases.

CASE 3.—Mr. C., aged 28, came to my office Nov. 30, 1905.

Family History.—Negative.

Personal History.—He had had no illness except pneumonia, eight years ago, from which he fully recovered.

Physical Examination.—Lungs, liver, heart, spleen and kidneys were normal. He is well-nourished; height, 5 ft., 11 inches; weight, 119 lbs.; temperature was 98.5; pulse, 71; respiration, 18. The eruption was extensive. There was a cluster of vesicles near the spine of the neck extending over the scapula. then to the shoulder and axilla, whence the main line ran along the outer side of the arm until it reached the elbow when it turned inward, followed the inner side of the forearm and went across the palm of the hand, terminating by several patches on the palmar and inner side of the ring finger.

Treatment.—The chrysarobin ointment was applied (20 grains to the ounce) morning, noon and night, with the necessary tonics and laxatives in the form of aperient waters.

Course of the Disease.—On December 5 the eruption had almost disappeared. Treatment was continued. December 15: The patient had no eruption and was apparently cured. December 22: The patient called and reported no return of the affection.

In sycosis I regard chrysophanic acid highly, as seen in the report of the following (one of eleven cases):

CASE 4.—Mr. D., aged 23, a native of Massachusetts, consulted me Nov. 20, 1905.

Family History.—This was excellent, except that one cousin on his mother's side had erysipelas.

Personal History.—He had pneumonia when 10 years old with full recovery; he had no other illness until the present, which was contracted some three months ago while away on a southern trip. Prompt treatment ever since had failed to give any except temporary relief.

Examination.—Papules and pustules were present involving the beard, whiskers and moustache, also to some extent the vertex, accompanied by inflammation and suppuration especially. When the hairs were extracted they seemed to be covered with a whitish powder. The patient was very nervous and had suffered from insomnia for nearly two weeks. Lungs, liver, heart, spleen and kidneys were found normal. Pulse was 68; temperature, 98.5; respiration, 17. There was general emaciation; he was about 22 lbs. lighter than when first taken ill.

Treatment.—Epilation was ordered and 20 grains of chrysarobin to the ounce of benzoated lard twice a day with needed tonics.

Course of Disease.—On November 30 there was some improvement along the sides of the face. I ordered the ointment applied morning, noon and night, and continued epilation regularly. December 3: There was marked improvement. December 7: The patient had fully recovered. December 15: There was no return of the disease and all the affected parts had become normal.

After epilation, the application of the acid seemed to enter the pustules and to strike at the root of the disease, the contents of the pustules being converted into a white substance, doubtless effectually destroying the offending parasite. This opens a new field for favorable observation.

DERMATITIS VENENATA.

Externally the application is liable to produce a peculiar deep, almost copper-red erythema, but after a few days the skin returns to its normal appearance. This shows the detergent properties of the acid, and all stains are soon removed by using a weak chlorinated lime solution. When the application of the drug is discontinued the bright red hue gradually changes to an Indian red; then in a few days desquamation occurs, and very soon the normal white skin is the result. The

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best way to apply the ointment is to rub it thoroughly into the scaly patches with a swab or tooth-brush. As it stains the nails badly, I prefer, sometimes in order to confine the ointment to the diseased tract, to rub it into a soft paste with water and to rub it over the patches, especially in psoriasis from which the scales have been removed. When this is dried, a layer of thin collodion should be applied over each patch and allowed to harden as a protective coating. Subsequently the patches are removed and the white skin appears. My favorite formula is: ℞ Chrysarobini, 10 parts; acidi salicylici, 10 parts; etheris, 15 parts; collodii flexilis add 100 parts.

Paint over the patches every day until they disappear and smooth skin appears. This preparation should be used with great caution, however, and when the skin is irritable and the congested patches are increasing in numbers it is then contraindicated, like arsenic internally. When the eruption is disappearing, or when chronic-thickened patches remain unchanged for a long time, an ointment of varying strength will effectually and speedily remove the scales and lessen the infiltration. I am not in favor of using the remedy on the scalp or face ordinarily, because it discolors the hair and conjunctivitis may follow.

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DISCUSSION.

DR. HENRY G. PIFFARD, New York City, gave a brief review of the early history of chrysarobin, which is made from the goa powder, and comes from Bahia, a Brazilian port. The speaker said that there is a vast difference in the various preparations of the drug that are on the market; some are slightly inert, some have very little effect, and some are very active.

DR. WILLIAM S. GOTTHEIL, New York City, said that in using chrysarobin he did not expect to get the proper effect from the drug unless the preparation was sufficiently strong to produce a decided reaction of the skin. He frequently used a 30, 40, or 50 per cent. ointment, which in that strength made a semi-solid mass, his object being to produce an inflammatory reaction in the skin. Most of the poor results from the use of the drug could be attributed to the weak or inert preparations that were applied.

DR. JAMES C. WHITE, Boston, said that he did not agree with Dr. Gottheil that it was necessary to produce a dermatitis in order to get the beneficial effects of chrysarobin. Personally, he preferred to use it strong enough to get its curative effects only, without producing a dermatitis. The latter was largely a matter of individual idiosyncrasy; in some persons a dermatitis would develop from its use, while in others such a result would never follow. The same is true of certain other drugs.

DR. R. A. MCDONNELL, New Haven, Conn., in referring to the objection to the use of chrysarobin on the scalp for fear of causing a conjunctivitis, said that he had applied it in many cases of fungous disease of the scalp with very satisfactory results, and without producing a conjunctivitis. He regards it as one of the most reliable remedies, particularly in parasitic diseases of the scalp.

DR. EDMUND L. COCKS, New York City, said that about a year ago he treated ten cases of parasitic disease of the scalp with chrysarobin with undoubted success, and without any resulting conjunctivitis or dermatitis. The scalp was first shaved, and then a solution of chrysarobin, one dram to two ounces of collodion, was painted on every second or third day, and reapplied as often as the application cracked.

DR. HENRY C. BAUM, Syracuse, N. Y., said that he thought the chrysarobin should only be used on the scalp in exceptional cases. Kaposi himself had warned his pupils regarding the possible dangers of applying the drug in that locality. Dr. Baum said that he had seen a number of cases of violent dermatitis follow the use of chrysarobin on the scalp. He recalled one instance where a physician had applied a small amount of chrysarobin to a ringworm of the nose in a young woman. It produced a violent dermatitis which extended to the eyes, and culminated in complete blindness. In every instance in which the drug was applied to the face or scalp, the case should be watched with the greatest care, and only a small area treated at a time until the individual idiosyncrasy of the patient could be determined.

DR. L. WEISS, New York, said that in using chrysarobin on the face or scalp, the possible resulting dermatitis could be prevented from spreading by the application of zinc gelatin, which acts as a compress.

GENERALIZED MULTIPLE PIGMENTED SARCOMA ORIGINATING IN THE SKIN.*

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AND
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The subject of this paper is generally recognized as presenting a distinct clinical picture, differing from all other sarcomata. The metastases may invade all the soft tissues. The distribution of the metastases appears to be by way of the blood stream and the lymphatics. There is always pigmentation, sometimes much, at other times little. In the same case we may find one nodule black and another white. The pigment is unevenly distributed. Some of the metastatic tumors appear entirely without pigment, while others in the same case are deeply pigmented. This pigment is the dark-brown, granular material known as melanin and is the same material that we find in normal skin and in pigmented moles. The disease is one of the most fatal of malignant tumors, and after metastases take place the case is practically hopeless.

The cases of multiple pigmented growths which are recorded as recovering either spontaneously or by arsenical treatment are evidently not of this variety, but probably can be placed in another class, described by Boeck[1] as "multiple benign sarcoid of the skin." Boeck has still further studied this disease in more recent cases and concludes that it is allied to tuberculosis, and therefore suggests the name *benignes miliar lupoid*[2] as a suitable one.

The beginning of this very malignant disease is most frequently in a pigmented mole, but not always so, as one would be led to believe by Unna's statement.[3] Crocker[4] reports a case which began as a blister, apparently due to friction on the outer side of the right foot. In the course of five months it became a fungating mass, slightly pigmented. The primary tumor was excised and followed promptly by metastatic tumors distributed through the body generally, which proved fatal in four months from the removal of the first tumor. In his report of a series of cases, J. C. Johnson[5] says of Case 7: "A most careful search failed to reveal any nevus or other melanotic growth of the skin or mucous membrane. There was no scar resulting from the removal of such tumor." In the body of his paper he intimates that the origin of this case may have been in the cortical por-

* Read in the Section on Cutaneous Medicine and Surgery of the American Medical Association at the Fifty-seventh Annual Session, June, 1906.

1. Jour. of Cutaneous and Genitourinary Diseases, vol. xvii, p. 543.
2. Archiv, für Dermat. und Syph., vol. lxxiii, p. 332.
3. "Histopathology of Diseases of the Skin," p. 745 (Walker's Translation).
4. Crocker: "Diseases of the Skin," third edition, p. 102.
5. "Melanoma," Jour of Cutaneous Diseases, vol. xxiii, p. 59.

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