are essential features in the clinical picture of tabes, yet their appearance in so many non-tabetic affections of the nervous system tends to nullify their importance in differential diagnosis, unless they are stable, and supported by other evidence.

Articular enlargement, pointed out by Charcot and insisted upon as frequently an early symptom, has been verified by several medical gentlemen of note, and merits our careful observation, as its presence may be the one symptom needed to the unfolding of a true case of tabes. I have been unable to verify, and am unwilling to accept as true, the statement recently current in several medical journals, that absence of pain in the popliteal space, on extension of the leg with extreme flexion of the thigh, is an early and positive proof of tabes; since the same clinical effect may be produced by a traumatism or disease limited to the anterior crural nerve. If of differential diagnostic value at all, its existence must be bilateral. Moreover, the absence of knee-jerk as a common factor in either affection cancels its diagnostic value, while motor weakness and muscular wasting—if present—negative any tabetic assumption. In a large percentage of tabetics the ataxia is a late symptom, and in such cases it is doubtless true that the lancinating pains are more constantly accompanied by optic atrophy and arthropathies.

Localized sweating was a noticeable feature in two cases under my observation. The first was unilateral in extent, the second was limited to the face, neck and arm of one side. The first one of these was seen by Dr. C. K. Mills of Philadelphia, who verified our diagnosis and noted this peculiar vasomotor disturbance. That this symptom belongs peculiarly to tabes remains an open question, for other cord or spinal nerve root affections may find *direct* expression in the same symptom or through the sympathetic system. In either case its differential diagnostic value becomes void.

THE THERAPEUTIC VALUE OF THE VARIOUS ANTI-MALARIAL AGENTS.

Presented to the Section on Materia Medica, Pharmacy and Therapeutics, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

BY J. R. GILBERT, M.D.

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Under this title we must at least give a limited number of drugs a hearing, though it be near impossible to consider each that has been given as an anti-malarial agent, for most, if not every drug found in the materia medica, has at some time received credit for its anti-malarial effect upon the human economy.

Before we enter upon the therapy of the subject of malaria, we should know what the pathology of the trouble is, so that we may intelligently administer those remedies that will the earliest counteract or destroy the pathologic condition that exists, with the least detriment to the human organism.

We know that when a person is inoculated with this bacillus malarie, he will surely have a malarial fever. While there is a slight difference in the germs that cause the various forms of malarial fever, they are practically the same, for the agent that will destroy one will also destroy the other. There have been a variety of opinions expressed as to how this organism enters into the blood. Some are earnest advocates of the avenue of entrance being the air-passages, and others the alimentary canal. And those who calmly

sum up all of the evidence and weigh it well in the balance, must be forced to the conclusion that the malaria bacillus enters both by the lungs and alimentary canal. One may become infected from water, another from food; and he who sleeps in a low altitude inhabited by this germ will most surely become the victim of this familiar disease, malaria.

Since we know what our condition is, when to look for paroxysms, and their cause, the next thing to consider is whether we can find, in our great armamentarium, an agent that we can diffuse into the blood of our patient, which will destroy the bacillus, and at the same time not do material damage.

When we look over the past, we find the housewife and the physician both endeavoring to administer to the wants of the wretched mortal who is apparently trying to shake the cords out of the old bed. One in his or her effort is drenching the poor sufferer with hot teas when he is already afire, another giving some herb that *they say* is good for *chills*. On and on they went, until at last, by mere accident, the great specific was discovered.

There are but few diseases for which we possess anything near a specific, but to the great relief of suffering humanity, we have ever ready in our armamentarium that drug which, when administered so that it may become diffused into the blood, will destroy the *bacilli malarie*, and do no hurt to the cells that go to make up the human body. This drug that is known in every household is *quinin*. Now, since we have a specific for the disease in consideration, it only remains to consider how it should be administered to attain this end and the helpful adjuvants, and last but not least, what we are to do when the patient's idiosyncrasy positively prohibits the use of our great boon to humanity.

Quinin, the great prime agent, has been administered in many different ways, and every recent textbook gives the various methods of administration and suggests the best way of administration, and those who are without experience in treating malarial fevers will find there are those minute points of technic that are only acquired by experience that they must learn.

I will say nothing of the way to administer this drug by the stomach, because I can add no more than all good, recent authors have laid down as rules to follow. I will make a few suggestions on the two much-neglected methods of quinin administration, viz., hypodermic and intravenous. It is only to those who live in the intensely malarious districts that these two methods will be of much interest practically, for stomach administration will suffice in all mild cases, as this drug will be taken up by assimilation; but when the physician is called to see a patient with a malarial paroxysm that is commonly called a congestive chill, and perhaps has reached that state of malarial hematuria and hematemesis where absorption or assimilation through the natural avenues is impossible, we must then reach our conclusion very rapidly for the bacilli malarie are causing such a combustion in the blood that the life of the individual will soon be gone, unless we can introduce into the blood that agent which will destroy the bacilli.

Hypodermic use first suggests itself to us, and when we take the soluble salts of quinin, such as the muriate, we can usually get enough of the drug into the circulation to destroy the great adversary. But sometimes we are too late to depend upon even the hypodermic injection into the subcutaneous tissue, for

death is so near at hand that the circulation is not sufficient to carry the drug into the volume of blood of the body from the capillaries. In this our dire extremity, if we inject a quantity, say a half-dram, into a vein, and use circulatory stimulants, we may often rob the grave of a victim.

The great object to be ever kept in view, for all know how to administer, is that if you can get this great germ-destroyer into the blood in time, where the germ of malaria is only found, you can save that poor mortal from an untimely grave. Then it becomes our duty to familiarize ourselves with the methods of hypodermic and intravenous medication.

For those who have the idiosyncrasy for quinin we will find salicin and salicylate of soda of great advantage. When given in large doses, it will have quite a satisfactory result. But fortunately for all, we seldom find a patient who will not stand some of the salts obtained from the Peruvian bark.

In old chronic cases it is necessary to give something else attention beside the disease germ. For after a person has long been the victim of malaria, he is sure to suffer from some weakened organ that has received the brunt of the burden in carrying the great and complex machine through the siege of poison that has been pouring acid on the polished plates and rusting the surface until it has overworked and loaded up the liver, kidneys and spleen, until a few more months among this poison would return them whence they came. This brings us, not to anti-malarials, but to that part of our armamentarium marked alternatives, and from them we select those best suited to the individual case. Arsenic and iodine will often be our selection, for in them we find that while we restore organs to their natural function we brace and tone up the nervous system, that has been shaken around for months, and made subservient to all emotional and outside influences.

There are other alternatives that will to some degree answer our purpose, but those are exceptional cases where arsenic and iodine will not render most good in chronic malaria. So, in our summing up of the therapeutic value of various anti-malarial agents, there are few drugs we need consider. We have the specific for the malarial poison, and by closely studying the complications and administering to them properly, we will relieve many who now suffer from crippled organs caused by long-continued malarial fevers.

TREATMENT OF CONGENITAL TALIPES

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BY HARRIET E. GARRISON, M.D.

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As I am not an orthopedic surgeon, in assigning me the task of preparing a paper upon the treatment of congenital talipes our worthy secretary has given me a burden which I feel unable to carry. What I desire to present to this society are the results obtained in the immediate treatment of the very few cases of congenital talipes which have occurred in my obstetric practice. It does not usually fall to the lot of a country practitioner to have many cases of congenital talipes, but we meet them occasionally at the most unlooked-for times and places, and it behooves us to be prepared for the unexpected.

One of the great benefits to be derived from a country practice is the necessity for alertness to recognize

and preparation to cope with any form of disease or surgical emergency, for at the time there is the greatest demand there is the least opportunity to procure a skilled specialist. Unless a physician is willing to give patient study to every branch of medical science he should never become a country doctor. For twenty years I practiced obstetrics in my general country work without meeting a case of talipes, and then in fifteen months I had three cases.

Case 1.—I was in the country, six miles from my office, and although I bathed the child I did not notice anything abnormal. The second day the father visited my office to tell me he thought one of the baby's ankles was out of joint. I immediately visited the child and found the right foot abducted to the third degree of talipes. There must have been an increase in the abnormal position since my visit or I could not have failed to notice it in the bath. The abduction had produced luxation of the joint, as I could feel the articulating surface of the tibia grate upon the os calcis and astragalus as I made gentle pressure on the joint with thumb and forefinger of the left hand, while I slowly drew the foot into position with my right hand. The foot and leg had previously been bathed in very warm boracic acid solution and, while held in position slightly adducted, was bandaged lightly with a narrow gauze roller bandage from the toes to near the knee. The bandage was then dampened and a little plaster-of-Paris dusted over it and allowed to dry while the foot was held in position. The dressing was left in position two weeks and then was removed by the mother. The mother was directed to keep watch of the baby's toes, that they remained the right color, that there might not be any danger from the pressure; and she was instructed how to apply gentle massage to the joint and adductor muscles every day after the bandage was removed. I did not see the child until it was nineteen months old, when it was brought to my office for treatment for the ankle, which was swollen and tender, from a wrench which had been given it by the child catching its foot in between two boards. The faithfulness with which the mother had carried out the massage treatment could be seen in the superior development of the muscles of the right leg over those of the left. There was still slight extension of the foot on the ankle, but not as much as in the left leg. The child had walked from the twelfth month. This extension of the foot on the ankle and a slight tendency of the shoes to wrinkle on the inside was all that remained of the talipes. As the child was wearing cloth buttoned shoes I advised a well-fitting pair of leather, laced, and if these wrinkled, to have the inside further strengthened by a piece of stiff leather.

Case 2 was five miles in the country in another direction from No. 1, and was a case of talipes calcareus, with the extension surface of the toes resting against the foreleg; this was accompanied by flat foot. The outer and inner extensor tendons of the foot were contracted until they stood out like whipcords, and the deformity seemed due to this contraction and a little displacement of the fourth tarsal bone. The foot could be easily brought into position, which was all the treatment given on the day of birth, with direction to the nurse to draw it into position whenever the baby received attention. As there was no improvement on my visit the second day, I replaced the tarso-metatarsal articulation, applied a pad of folds of gauze over the joints and bandaged from toes to above the ankle while the foot was in correct position. This held the foot properly and the nurse was directed to keep it on as long as it stayed in place; but to notify me as soon as there was any appearance of displacement of the foot. I saw no more of the child until it was over five months old, when I went to the house for the purpose of inspecting the foot, and could not tell which foot had been deformed, as they were both straight and used with the same freedom and correct movement.

Case 3 was double equino-varus of the first degree, complicated with bow-legs and knock-knee. As the child was given in care of a trained nurse, and as she did not think the condition serious enough to need any attention, nothing was done until the child was a month old, when I was called to clip the frenum linguae for tongue-tie. At this time the mother called my attention to the fact that when the baby contracted its feet they turned in and never out. I pointed out the curvature in the legs and tendency of the knees to come together and advised a system of massage to strengthen the muscles of the legs. In the course of six weeks, the mother told me, that the feet were just as likely to turn out as in when flexed. At the present time, six months later, the legs are very much straightened and there is no appearance of talipes.