

while blue-blindness and yellow-blindness are also inseparable.

“A good test for the colour-sense must fulfil the following desiderata. 1.—It must be capable of rapidly detecting the existence and nature of the anomaly. 2.—It must make the least possible demand upon the intelligence of the patient. 3.—It must render deception, whether intentional or unintentional, impossible; and therefore any method which depends on the correct name being given to the colour is bad. 4.—The possibility of any interference of the judgment must be excluded, in order that the sensation to be tested may alone come into play.”

The test which fulfils the above requirements is that of Prof. Holmgren of Upsala. His method is conducted by means of coloured wools. “In the first instance, a light green woollen skein is laid before the individual, and he is required to pick out from the others all skeins of the same colour as the pattern. If this test be passed, the individual’s colour-sense is normal. If it be not passed, a purple wool is placed before him, and if he succeed in matching it, his colour-sense is merely imperfect. If, in addition to purple skeins, he match the purple pattern with blue or violet, he is completely red blind. If, in addition to purple, he add green or grey, he is green-blind. If, in addition to purple, he add red or orange, he is blue-blind. The examination may end with this second or purple test, or the third or red test may be proceeded with. A bright red wool is laid before the individual, and if he be red-blind he will match it with green and brown shades which are darker than the pattern; if he be green-blind he will match it with green and brown shades which are brighter than the pattern. By this means the colour-sense of an individual may be tested in the space of a minute or a minute and a half, while no word need be uttered on either side, and a large roomful of other people about to be tested may look on without vitiating the test.”

Prof. Cohn modifies the test by employing only the purple skeins—or rather rose-coloured, that is, pale purple, skeins. Purple being a mixture of red and blue, can detect every kind of colour-blindness. “In red-green blind persons it contains a colour they cannot see, *viz.*, red: and for yellow blue blind persons it contains a colour they cannot see, *viz.*, blue” On Holmgren’s principle I have made a set of tests with threads of coloured wools and have examined or had examined upwards of 300 persons—men and women—mostly prisoners in jail, but have failed as yet in detecting a single instance of the absence of the colour-sense. In all instances the light-green thread has been rightly matched without hesitation.

Attention is directed to the subject with regard to its practical bearing on railway employes, engine drivers and pointsmen on Indian Railways. Are these classes of persons examined as to the colour-sense? Does colour-blindness exist in this country? The question deserves attention. I presume it does, and that a large number of observations will show its existence.

Partabgarh, 14th May 1880.

REMARKS ON IGNIPEDITES.

By SURGEON-MAJOR B. EVERS, M.D., C.M.,

Civil Surgeon, Wardha.

Now that the subject of Beri-beri or acute œdema has been made the topic of discussion in the *Indian Medical Gazette*, I beg leave to draw attention to the condition known as Ignipedites or “Burning of the feet,” in natives. It is a common, but obscure disease, especially so far as its pathology is concerned. The only allusion to it is made, I find, in Waring’s *Pharmacopœia for India* (page 163), where, in noticing the medicinal qualities of the *Vitex negundo*, the author says, that “this noble herb is of value in the treatment of Beri-beri and in the allied and obscure affection, burning of the feet, (Ignipedites) in natives.” Most surgeons have I have no doubt, seen instances of this affection, but few, I think, are aware of the distressing nature of the malady; and as a natural consequence, when such patients present themselves for treatment, some mild, tonic or alterative is prescribed, more as a placebo than anything else; and the patient, finding that he is not benefited by such treatment, rushes as a matter of course to the Baidis and mercurialization for relief. I have seen instances of this affection again and again, but have never, up to the present time, been able to keep such a patient constantly under observation; the fact is, that the man had exhausted the skill of all the Baidis, and the virtues of all the charms and poultices prepared for him by the old women of his village. Poultices made of the leaves of the henna (*Lawsonia alba*) and of the *Vitex negundo* are said to be useful in these cases; but all these had failed to afford relief. I have seen the disease more frequently in men than in women; and the subject has always been a Hindoo.

Pandoo, aged 35, Hindoo, male, was admitted as an out-door patient of the Wardha Main Dispensary on the 22nd November 1879. The history of the case is this. About six months ago he suffered from a severe attack of fever; he was treated by Baidis, and they salivated him with mercury, but still the fever continued; he was unconscious for about eight days, and when he recovered consciousness, the first thing he noticed was, that the right foot felt ‘dead’ and heavy, all sensation in it was lost. In a few weeks’ time the feeling of ‘deadness’ passed away, and was succeeded by a constant distressing sensation of burning in the sole of the foot; this sensation, he states, is increased by the application of warmth, and also when the foot comes in contact with the ground or with any object. He has tried many remedies so-called, but has not obtained relief. He is a married man, and has four children; but since this affection appeared he has lost all desire for sexual intercourse. He is a man of slight build, and apparently in good health. He had gonorrhœa when young, but has never had syphilis: neither does there appear to be any rheumatic taint in his constitution. There is nothing in his appearance to excite a suspicion of Lepa. Urine normal in quantity, but deficient in urea and uric acid, and with a specific gravity of 1010, but no trace of albumen. There is no hypertrophy of the

epidermis of the sole of the foot; neither is the epidermis thinner than natural. The first thing that would suggest itself to any observer, would be to ascertain whether the sensation complained of was something positive. To ascertain this, I took the patient's temperature in the axilla, and found it to be 91° F.: between the great toe and second toe of the right foot (the affected one) the temperature was 85.2° F.; and in the left foot the temperature was 87.1° F. In both feet, it will be observed, the temperature was less than that in the axilla; and the general temperature taken in the axilla was below the normal blood heat (98° F.). On another occasion the temperature in the axilla rose to 99° F.; and in the right foot it was 89° F., and in the left 91° F. On all occasions there was at least a difference of two degrees in the temperature between the right and left foot; the temperature of the affected foot always being lower. But it might be asked, was there no hyperæsthesia? I did not overlook this fact: and in order to determine the state of tactile sensibility, I adopted Weber's plan—the points of a pair of compasses were protected by small pieces of cork, and applied as directed for this purpose; then the shortest distance apart at which these could be recognised as separate points, would give us an idea as to the degree of sensibility. In the thigh, above the knee-front, the shortest distance was from 2½ to 3 inches; on the front of the upper third of the leg the shortest distance was the same, but a little less on the corresponding back part of the leg. On the front of the right leg at the middle and lower thirds, the shortest distance was between 8 and 9 inches; and in the sole of the foot the shortest distance was quite 10 inches. In the left leg and foot the distances were generally less, but still greater than would be found in any ordinarily healthy man. I have tested the tactile sensibility of these parts in other men of the patient's station in life, and of the same style of dress, and the same general habits, and I have found that in the leg the shortest distance was from 2 to 3 inches; and in the sole of the foot the range was from 3 to 4 inches. Taking all this into consideration, I came to the conclusion that this peculiar affection is nothing more than one of the many forms of paræsthesia, or perverted sensation, that come under the notice of the physician. I do not for a moment imply by this that the patient's sufferings are purely imaginary; on the contrary his sufferings are to him real and strong subjective impressions, as real as the sufferings of a girl in all the agony of hysterical tetanus. What the actual nerve lesion is that induces this state it is impossible to conjecture. We are aware that the ganglion in the posterior root influences the nutrition of the nerves; but what the changes may be that are taking place in the cells of the ganglion, and which give rise to such an anomalous condition as impaired tactile sensibility, combined with a distressing sensation like that of ignipedites, pathology has not yet revealed to us. The anaesthesia is limited moreover to the parts supplied by the branches of the musculo cutaneous nerves and branches of the plantar nerves. A well-known writer on Physiology says—"It may be stated generally that pain

is only produced by bodies which have a temperature under 50° F. or over 122° F.: hence burning implies an amount which considerably exceeds that of the ordinary animal heat, and must necessarily disturb the molecular condition of the nerves." Yet here is an instance in which the subjective impression of heat is complained of, and yet the actual temperature is much below that of ordinary animal heat. Another writer, to show how fallacious the senses are in these respects, says,— "In a shivering ague fit the patient feels excessively cold, whereas his actual temperature is several degrees above the normal; while in the sweating stage which succeeds it, he feels very warm, whereas really his temperature has fallen several degrees." Instances of these perversions of sensation are not uncommon during the period of gestation; and burning of the hands and feet are often complained of by women; but here we can explain the phenomenon by referring it to sympathy with the uterine system; and we know further, that there is a plethora natural to the parturient state. Again, patients recovering from severe attacks of fever, have been known to complain of these perversions, and sometimes even the special senses suffer; thus, some complain of a constant offensive smell in the nostrils, and others tell us that they have a constant sweet taste in the mouth, as if they had sugar in it. I have examined the saliva in these cases, but have never been able to detect sugar in it. Such perversions are fortunately, however, only temporary. As regards the treatment of Ignipedites, I have found that most benefit results from the use of iodine and its preparations; the relief is very gradual, and it will only be after a fortnight or three weeks that the patient will be able to recognize that the 'burning' is less. Later on I employ dilute phosphoric acid, strychnia, quinia, and iron. Under this plan of treatment my patient has shown slow but steady improvement. This treatment is, I must acknowledge, to a certain extent empirical, for, as I have already shown, we are wholly unacquainted with the pathology of the malady.

I shall be most happy to receive further information on this subject from any of my professional brethren.
Wardha, 17th June 1880.

A MIRROR OF HOSPITAL PRACTICE.

ON LARGE AND REPEATED DOSES OF BELLADONNA
IN ACUTE INTESTINAL OBSTRUCTION.

BY SURGEON M. D. MORIARTY, M. B.,

Offg. Civil Surgeon, Muzaffarnagar.

At the annual meeting of the British Medical Association in Bath, August 1878, Dr. Norman Kerr read notes of five cases of intestinal obstruction in which he had given large and repeated doses of Extract of Belladonna with the happiest results; the dose he employed was from 1 to 2 grains, and repeated every hour till relief was obtained; the average quantity of the drug taken by each patient was 12 grains.

On reading these notes (*British Medical Journal*, August 31st, 1878), I determined to give the drug a trial, more especially as I had but a short time before seen a case of acute obstruction which had terminated fatally. The following are the notes of three cases of obstruction in which I have used the drug:—