

the result of the violent contractions to which the affected muscles had been subjected during the tetanic spasms. This stiffness of the muscles after tetanus seems to me rather to indicate the existence of reparative changes going on in the nervous matter of the spinal cord and medulla, for I have always found small hæmorrhagic effusions in these localities after death from tetanus, but beyond lesions of this description I have never satisfied myself as to the presence of degeneration I have never satisfied myself as to the presence of degenerative changes in the proper structures of the nervous centres. Doubtless as the small blood clots formed among the elements of the nervous centres during the attack of tetanus were being absorbed, and the spaces they had occupied were being filled up by healthy elements, the nerves connected with the spots undergoing reparative changes would participate in the hyperaction, and this, influencing the muscles they supply, would perhaps account for the stiffness of the limbs, from which patients suffer for a month or two after a severe attack of tetanus.

Baghuth, aged 35, a slender but muscular Ooriah coolie, was admitted into the Chandnie hospital on the 19th of February, 1871, with a contused wound over the back of the left hand. A slough formed at the site of injury which gradually became detached, and was cast off on the 5th March, leaving a clean healthy sore which was dressed with lint soaked in carbolic oil. On the following day—6th (sixteen days, after the receipt of injury,) the patient's features became pinched, and the characteristic expression of approaching tetanus became unmistakably developed. On being questioned the patient complained of slight stiffness in the muscles of the neck and chest, but of no trismus or difficulty of deglutition. Dr. C. Macnamara ordered calabar bean to be given; at first one grain of the extract (procured from Messrs. Scott, Thomson & Co., originally from Marson & Co., London,) was ordered every 2nd hour, its effects to be carefully watched: in addition the patient was ordered two scruples of chloral hydrate at bed-time. On the morning of the 7th it was recorded that the patient had slept after taking the chloral, temperature in axilla 98, pulse 84, respiration 18, pupils contracted: to have one grain of extract calabar bean every 2nd hour, during the day, and two scruples of chloral hydrate at 10 p.m. In the evening the temperature of the body was 99, pulse 86, respiration 18. On the 10th March opisthotonic tetanus was well developed, but no trismus; deglutition unimpeded; temperature 96.2, pulse 84, respiration 24; pupils very much contracted; ordered one grain of extract calabar bean every hour, and the chloral hydrate to be continued every night.

The spasms now became very intense, so that the dose of the extract of calabar bean was increased to two grains every hour.

On the 14th the spasms were still severe, and very easily excited, no trismus or difficulty of deglutition, temperature 99, pulse 108, respiration 30; patient looks worn and exhausted; to take three grains of extract of calabar bean every hour during the day. At 8 p.m. spasms were much less severe and of shorter duration; the patient has taken during the day no less than forty-eight grains of the extract of calabar bean; he has not slept; temperature 99.3, pulse 126, respiration 42; to have two scruples chloral hydrate at 10 p.m. This treatment was continued, as the patient progressed favourably, and on the 17th the spasms were reported as being much less severe, though still readily excited; skin bathed in a profuse cold sweat, pupils contracted, has had sixteen liquid stools within the last 24 hours; always sleeps well after the chloral hydrate.

The diarrhoea having ceased without interference, the above treatment was continued (though the spasmodic contractions were merely nominal after the 20th—fourteen days from the commencement of attack,) until the 26th March. He was discharged from hospital on the 12th April.

The patient's diet consisted from first to last of raw eggs,

with Liebig's extract of meat, beat up in milk—a small quantity being given every four hours.

The largest quantity of the extract of the calabar bean taken in one day was sixty grains. One ounce five drachms and fifty-three grains of the extract of calabar bean, and one ounce and five drachms of the chloral hydrate, were taken by this patient in 20 days.

The effects of this extract of calabar bean were tried on other patients, and it was found to be perfectly good; its characteristic symptoms being developed on the iris when a very dilute solution was applied to the conjunctiva.

(To be continued.)

LIST OF CASES TREATED BY THE SUBCUTANEOUS INJECTION OF QUININE IN THE HOSHUNGABAD POLICE HOSPITAL DURING 1869.

By P. CULLEN, M.D., *Civil Surgeon, Hoshungabad.*

(Continued from page 88.)

XVI.—Naveeyar Khan, a Mahomedan, aged 18, admitted 21st September 1869, with fever. On the 22nd half a drachm of the solution was injected, but fever recurred on the 23rd and 24th, after which no relapse occurred, and he was discharged on the 28th September.

XVII.—Mahadev Persad, a Hindoo, aged 32, admitted 21st September, 1869. On admission, being free from fever, a purge was given, and half a drachm of the solution injected, when no relapse occurred, and he was discharged on the 27th September.

XVIII.—Dhookee, a Hindoo, aged 30, admitted 22nd September, 1869, with fever. A purge was given, but fever returned on the 23rd. On the 24th half a drachm of the solution was injected, when no further relapse occurred, and he was discharged on the 1st October.

XIX.—Summun Sing, a Hindoo, aged 60, admitted 24th September, 1869. A purgative was given on admission, and on the 25th before the paroxysm half a drachm of solution was injected, and he remained free until the 29th, when a relapse occurred. On the 30th half a drachm more of the solution was used, but fever recurred on the 1st, 2nd and 3rd. but left him on the 4th, and he continued free until the 14th, when he was discharged.

XX.—Nundah, a Hindoo, aged 22, admitted 24th September, 1869, with fever. A purge was given, but the fever recurred daily until the 28th, when half a drachm was injected; the fever, however, continued to recur until the 6th October, when a second injection was made, and he remained free until the 11th, when a relapse occurred, and daily attacks recurred until the 15th, when a third injection was used, after which the fever left him, and he was discharged on the 20th October.

XXI.—Baj Nauth, a Hindoo, aged 30, admitted 25th September, 1869. On admission a purge was given, but fever recurred on the 26th, 27th and 28th, when half a drachm of the solution was injected. On the 29th he was free, but on the 30th fever returned, and continued to do so until the 3rd October. On the 4th, he was free, and, without further medicine, continued so until the 10th, when he was discharged.

XXII.—Shaik Fareed, a Mohomedan, aged 45, admitted 26th September, 1869, with fever. A purge was given, but no thorough remission occurred until the 4th October, when half a drachm of the solution was injected, when the fever subsided until the 14th and then returned daily until the 18th, when a second injection was made, and the fever left him entirely, and he was discharged on the 21st October.

XXIII.—Dyaram, a Hindoo, aged 40, admitted 27th September, 1869. On admission, as he was free from fever, a purge was given and half a drachm of the solution injected, and he remained free until the 29th, when fever recurred on the 30th, and 1st October, and then left him, and he was discharged on the 8th October.

XXIV.—Jullah, a Hindoo, aged 40, admitted 27th September, 1869. A purge was given on admission, and on the 28th half a drachm of the solution was injected, but fever recurred that

day and on the 29th, and then left him, and he was discharged on the 10th October.

XXV.—Ramperkas, a Hindoo, aged 20, admitted 28th September, 1869; had fever when admitted. A purge was given, but fever recurred daily until the 5th, when half a drachm was injected, but the fever continued until the 9th, and then without further medicine left him, and he was discharged on the 15th.

XXVI.—Munnah Sing, a Hindoo, admitted 28th September, 1869. A purge was given on admission, but the fever continued daily until the 7th October, when half a drachm was injected, after which no relapse occurred, and he was discharged on the 13th October.

XXVII.—Parbutty, a Hindoo, aged 24, admitted 30th September, 1869. A purge was given on admission, and on the 1st October half a drachm of solution was injected, and he remained free from fever, and on the 2nd he was also free. On the 3rd he had a relapse, on the 4th he was free, on the 5th half a drachm more was injected, on the 6th the fever returned, but then left him, and he was discharged on the 13th.

XXVIII.—Alliooddeen, a Mahomedan, aged 20, admitted 30th September, 1869. A purgative was given on admission, but the fever continued strong on him until the 7th October, when, a remission occurring, half a drachm of solution was injected, but the fever returned on the 8th; he was free on 9th and 10th, but had another relapse on the 11th, after which the fever left him without any further medicine, and he was discharged on the 15th.

XXIX.—Seeta, a Hindoo, aged 40, admitted 3rd October, 1869, with fever on him. A purgative was given, but the fever continued the whole of the 4th and 5th. On the 6th half a drachm of the solution was injected, after which no relapse occurred, and he was discharged on the 11th.

XXX.—Bawanydeen, a Hindoo, aged 50, admitted 3rd October, 1869, with fever. A purge was given, but the fever continued the whole of the 4th and 5th. On the 6th half a drachm of injection was used, after which no relapse occurred, and he was discharged on the 13th.

XXXI.—Ram Deen, a Hindoo, aged 35, admitted 6th October, 1869. A purgative was given on admission, but did not operate, and was repeated on the 7th, but the fever returned early on the 8th, 9th, and 10th. On the 11th half a drachm of the solution was injected, after which no relapse occurred, and he was discharged on the 20th.

XXXII.—Seewhy Khan, a Mahomedan, aged 24, admitted 8th October, 1869. A purge was given on admission, but the fever returned daily until the 11th, when a decided remission occurred, and half a drachm of the solution was injected, after which no relapse took place, and he was discharged on the 14th.

XXXIII.—Ameerbux, a Mahomedan, aged 20, admitted 9th October, 1869. A purge was given on admission, and on the 10th half a drachm of the solution was injected, after which no relapse occurred, and he was discharged on the 14th.

XXXIV.—Chunna Lall, a Hindoo, aged 45, admitted 12th October, 1869, with strong fever on him. A purge was given, but no proper remission occurred until the 15th, when half a drachm of the solution was injected, and he remained free until the 18th, when the fever returned, also on the 19th and 20th, then left him for the 21st, 22nd, 23rd, and 24th, and returned on the 25th, and recurred on the 26th, 27th, and 28th, at the usual hours, and then without further medicine left him, and he was discharged on the 3rd November.

XXXV.—Mun Moden Sing, a Hindoo, aged 50, admitted 12th October, 1869. A purge was given on admission, but the fever continued until the 15th, when during remission half a drachm of the solution was injected over the spleen; on the 16th and 17th the fever returned, but slightly, but after this it regained its force, and continued until the 30th, when diarrhoea came on and continued for five days, and then the fever and diarrhoea both subsided without further treatment, and he was discharged on the 17th November.

XXXVI.—Davy, a Hindoo, aged 25, admitted 15th October, 1869. A purge was given on admission, and half a drachm of the solution injected at once, no return of fever occurred, and he was discharged on the 20th.

XXXVII.—Hunwar Khan, a Mahomedan, aged 25, admitted 17th October, 1869. A purge was given on admission, and on the 18th half a drachm of the solution was injected, but the fever returned on the 19th, and again on the 20th, and then left him, and he was discharged on the 1st November.

XXXVIII.—Ram Churn, a Hindoo, aged 30, admitted 19th October, 1869. A purge was given on admission, and on the 20th half a drachm of the solution was injected, but the fever returned daily until the 30th, and then left him without further treatment, and he was discharged on the 8th November.

XXXIX.—Baddeepersad, a Hindoo, aged 30, admitted 20th October, 1869. A purge was given on admission, and on the 21st half a drachm of the solution injected, but fever returned on the 22nd, after which it left him, and he was discharged on the 27th.

XL.—Nunnah Ram, a Hindoo, aged 44, admitted 21st October, 1869. A purgative was given on admission; on the 22nd half a drachm of the injection was used, but the fever returned that day and on the 23rd; on the 24th he was free, but the fever returned on 25th, then again on 27th and 28th, and then without further injection left him, and he was discharged on the 1st November.

XLI.—Seetul Patuk, a Hindoo, aged 40, admitted 21st October, 1869. He had strong fever when admitted. A purgative was given, but the fever did not remit until the 23rd, when half a drachm of the solution was injected, and he remained free that day and on the 24th, but the fever returned on the 25th; he was free on the 26th, but it recurred on the 27th and 28th, and then left him without further medicine, and he was discharged on the 3rd November.

XLII.—Delawar Khan, a Mahomedan, aged 24, admitted 23rd October, 1869. He was admitted during an intermission. A purgative was given, and half a drachm of the solution injected, and no return of fever occurred, and he was discharged on the 27th.

XLIII.—Gunga Deen, a Hindoo, aged 40, admitted 23rd October, 1869, during an intermission. A purge was given, and half a drachm of the solution injected, and no return of fever occurred; he was discharged on the 27th.

XLIV.—Emam Bux, a Mahomedan, aged 30, admitted 24th October, 1869. During an intermission a purgative was given, and half a drachm of the solution injected, and no return of fever occurred. He was discharged on the 28th.

XLV.—Toorab Khan, a Mahomedan, aged 24, admitted 24th October, 1869. On the 25th half a drachm of the solution was injected; no return of fever occurred, and he was discharged on the 28th.

(To be continued.)

Deaths in the North-Western-Provinces.—The death-rate of February was,—per 1,000—cholera 0·0, small-pox, ·03, fevers ·63, bowel complaints ·11, injuries ·01, all other causes ·15; total ·98. There were 50 deaths from suicide (17 males and 33 females); 71 from wounds (46 males and 25 females); 357 from accident (188 males and 169 females); 80 from snake-bite and wild animals (40 males and 40 females). Population 83,014,921.

Deaths in the Central Provinces.—The death-rate of February was,—per 1,000—cholera 0·0, small-pox 0·8, bowel complaints 0·1, injuries 0·02, all other causes 0·16; total 1·1. There were 25 deaths from suicide (9 males and 16 females); 9 from wounds (7 males and 2 females); 76 from accident; 48 males and 28 females; 36 from snake-bite and wild animals (14 males and 22 females). Population 6,701,239.

Deaths in the Punjab and its dependencies.—The death-rate of February was,—per 1,000—cholera 0·0, small-pox 0·15, fever 0·94, bowel complaints 0·06, injuries 0·0, all other causes 0·43; total 1·59. There were 4 deaths from suicide (3 males and 1 female); 4 from wounds (3 males and 1 female); 127 from accident (86 males and 41 females), 10 from snake-bite and wild animals (5 males and 5 females). Population 16,859,219.