

now moderate; his strength is increasing, and he is in every way doing well.

DATE.	Days of illness.	TEMPERATURE.			PULSE.			RESPIRATION.		
		5 A.M.	12 NOON.	6 P.M.	5 A.M.	12 NOON.	6 P.M.	5 A.M.	12 NOON.	6 P.M.
June 18	June 4	..	..	104.2	..	..	130	..	..	26
" 19	" 5	102.4	104.4	103.8	130	130	130	30	30	30
" 20	" 6	104.2	97.	96.6	130	92	83	40	24	22
" 21	" 7	96.8	96.6	97.2	80	80	80	18	22	20
" 22	" 8	96.4	97.6	98.	66	70	64	18	18	18
" 23	" 9	97.	98.2	98.	58	64	64	18	20	18
" 24	" 10	96.8	98.	98.2	58	66	60	18	19	20
" 25	" 11	97.8	98.	97.2	58	64	60	15	18	18
" 26	" 12	97.4	98.	98.2	54	60	60	18	15	18
" 27	" 13	98.	98.	98.4	58	60	62	14	15	16
" 28	" 14	97.8	98.	98.	60	62	62	15	15	18
" 29	" 15	101.4	104.4	103.6	98	120	120	20	20	22
" 30	" 16	103.6	104.4	104.	120	128	120	20	22	22
July 1	" 17	102.8	101.2	105.	120	120	124	18	20	22
" 2	" 18	102.	103.2	101.6	112	120	100	20	22	20
" 3	" 19	95.	95.6	96.1	75	75	74	15	15	14
" 4	" 20	95.	96.2	97.6	75	75	68	14	20	18
" 5	" 21	96.6	96.2	97.4	54	62	60	14	15	18
" 6	" 22	97.	97.8	98.	58	60	70	16	18	18
" 7	" 23	97.2	97.8	98.	54	70	68	14	18	18
" 8	" 24	97.2	98.2	98.2	60	72	70	16	18	20
" 9	" 25	97.6	98.2	97.6	62	70	70	16	16	20

JOHN INCE, M.D.,  
Civil Surgeon.

Correspondence.

CHOLERA AND LUMBRICI.

TO THE EDITOR OF THE "INDIAN MEDICAL GAZETTE."

DEAR SIR,—As there has been some correspondence lately in the *Indian Medical Gazette* regarding cholera and lumbrici I may mention a case that occurred in my regiment during the cholera epidemic of 1872 at Peshawur.

Sepoy Bikaree was admitted into hospital on the 15th October suffering from violent purging and vomiting. In addition to the tent for decided cholera cases I had another pitched at some distance from it for suspicious diarrhoea cases. As the case was not sufficiently pronounced he was ordered to be removed into the latter tent. Astringents were given and the diarrhoea was checked; the vomiting, however, still continued the region. On the 17th he was much worse; he sank into a state of collapse and became unconscious. On examining his stools minutely I detected several small round worms. Turpentine was administered, and a great number of small round worms came away. On the morning of the 18th he vomited a large round worm, about 12 inches in length (*ascaris lumbricoides*).

The vomiting suddenly ceased, and all the grave symptoms disappeared.

The turpentine was continued along with infusion of quassia. The patient gradually came round, and was discharged, perfectly well, on the 21st October.

Yours truly,  
A. B. STRAHAN, M.B.,  
Surgeon, 36th N. I.

AGRA, 24th August 1874.

CIVIL SURGEONS AND THEIR DUTIES.

TO THE EDITOR OF THE "INDIAN MEDICAL GAZETTE."

SIR,—A cry has of late gone forth from various quarters that Civil Surgeons throughout India, but more particularly in the Bengal Presidency, are neglecting their professional duties, and take but little or no interest in dispensary work. They have been taunted for paying more attention to their jails and to the manufacture of *dhurries* than to their dispensaries and to the treatment of their native patients. Professional duties are said to be performed in a routine manner; no enthusiasm is shown and little interest is taken in the work;

consequently the attendance at dispensaries is comparatively small. The operations performed are practically confined to lithotomy and excision of tumors, and the medical treatment is looked upon by natives as a farce.

Any unbiassed mind, practically acquainted with the working of dispensaries, must confess that, as institutions for healing the sick, they are a comparative failure, and that native ideas concerning our medical treatment are correct.

Civil Surgeons have only themselves to blame for this result. If ordinary kindness had been shown to dispensary patients, if the ordinary amount of attention had been paid to their ailments, and if these had been treated with ordinary success, human nature must have succumbed to such influences, and the sick have crowded to our dispensaries.

What success can be expected from a system which permits a Bengalee Baboo to diagnose disease by a mere glance at the patient, or by asking a few questions in presence of a promiscuous assemblage of men and women, questions which in many instances should only have been asked in private. A name is given to the disease, some useless or fusty bazaar medicine, purchased on account of its cheapness, is prescribed, and dispensed in a haphazard way by a careless, and it may be ignorant, compounder. A civil surgeon educated in the schools of England is a witness to this scene of quackery and in countenancing it by his presence for the space of 15, 30 or perhaps 60 minutes daily, he fancies that he has done his duty.

The Bengalee Baboo, otherwise Assistant Surgeon, has received a sound medical education, the aim of which has been to teach him how to heal the sick by the administration of what are called European medicines. Possessed of such knowledge he is placed in charge of a sadder dispensary, supplied with a scanty stock of European medicines, and an assortment of dried roots and leaves called bazaar medicines or indigenous drugs. The former, owing to their limited quantity, can only be prescribed in very exceptional cases, and with the properties and mode of administration of the latter, the Assistant Surgeon is totally unacquainted; and cannot even recognise specimens of those drugs which he is obliged to prescribe.

The whole system of medical treatment in dispensary practice is a sham, and is deservedly ridiculed by natives.

The profession and the public look to Civil Surgeons to improve the present state of matters.

I am, &c.,  
SURGEON.

Selections.

ON THE NATURE AND PHYSIOLOGICAL ACTION OF THE POISON OF NAJA TRIPUDIANS AND OTHER INDIAN VENOMOUS SNAKES.—PART I.

By T. LAUDER BRUNTON, M.D., Sc.D., M.R.C.P., and J. FAYRER, C.S.I., M.D., F.R.C.P. LOND., F.R.S.E.,

Surgeon-Major, Bengal Army.

[From the Proceedings of the Royal Society, No. 142, 1873.]

On the Poison of Naja tripudians.

THE destruction of life in India by snake-bites is so great, that, with the hope of preventing or diminishing the mortality, in 1867 Dr. Fayrer began, and has recently completed, a protracted and systematic series of investigations on the subject in all its aspects; and, in a work entitled the 'Thanatophidia of India,' has published a description of the venomous snakes found in British India, with an account of a series of experiments on the lower animals, conducted for the purpose of studying the nature of the poison, its *modus operandi*, and the value of the numerous remedies that have been from time to time reputed as antidotes—that is, as having the power of neutralizing the lethal effects of the virus, and of saving life.

His object in carrying out these investigations has been:—

- 1st. To ascertain the nature and relative effects of the bite of the different forms of Indian venomous snakes, and the conditions and degrees of intensity under which the activity of the virus is most marked.
- 2nd. The physiological action of the virus, and its mode of causing death.
- 3rd. The value of remedies, and the extent to which we may, by preventive or therapeutic measures, hope to save life.
- 4th. To ascertain and make known the actual state of our information in connexion with these three points of inquiry,

and to substitute scientific and rational knowledge for vague, empirical, and dangerous theories.

He has had the honour of submitting a copy of this work to the Royal Society; and it is therefore unnecessary to occupy its time by repeating much of what is therein related on the 1st, the 3rd, and part of the 4th heads.

But on that which is involved in the 2nd, and partly in the 4th, much is still required to be done; and therefore on the question of the nature and physiological action of the virus on life, and the application of that knowledge in the treatment of those poisoned, the following investigations have been made.—

That the subject is one of interest in a purely scientific as well as sanitary point of view we believe will be admitted; for it is as important to humanity as to science that the nature and properties of a poison which, in India alone, probably destroys over 20,000 human beings annually should be determined.

We are aware that these figures may excite astonishment and even mistrust; but the sources from which the information is derived place it, we think, beyond a doubt, being derived from official returns for the year 1869, supplied to Dr. Fayer by the Government of India.

He has received reports from Bengal, the North-West Provinces, Punjab, Oude, Central Provinces, Central India, Rajpootana, British Burmah, showing the loss of life from snake-poisoning in those provinces in the year 1869.

These records represent, it is true, only a portion of India, as the Madras and Bombay Presidencies, as well as other parts of India, are not included. Had similar information been obtained from these provinces, the list of mortality would doubtless have been much larger; as it is, the number of deaths is perfectly appalling, and the subject merits consideration, with the view of providing, if possible, some remedy.

He has roughly classified the deaths under the headings of the snakes that inflicted the fatal wound; but the records are rather vague on this point, and the information not perhaps always very reliable. Still they are sufficiently explicit to make it clear that, in order of destructiveness, the cobra (*Naja tripudians*) occupies the first place on the list; the krait (*Bungarus caeruleus*) the second place; whilst under the headings of "other snakes" and "unknown" must be included many deaths due to the cobra, *Bungarus caeruleus*, *Ophiophagus*, *Daboia*, *Echis carinata*, *Bungarus fasciatus*, *Hydrophida*, and some perhaps to the *Trimeresuri*, though, as to the last, there is reason to believe that deaths from their bites are comparatively very rare.

The total number of deaths recorded therefore stands thus:—

Bengal, including Assam and Orissa . . . . .	6,645
North-West Provinces . . . . .	1,995
Punjab . . . . .	755
Oude . . . . .	1,205
Central Provinces . . . . .	606
Central India . . . . .	99
British Burmah . . . . .	120
Total . . . . .	11,416

of a population (according to Dr. Hunter) of 120,972,263, or, in round numbers, about one person in every 10,000.

This total, large as it is, we fear cannot be regarded as the real mortality in these provinces, nor may the numbers be accepted as an absolutely true indication of the relative frequency of deaths in each.

The information from which these records were framed was, though official, probably only partial and imperfect. Dr. Fayer believes that if systematic returns could be kept, as he has suggested that they should be, by the police in every district, sub-division, and municipality, the number of deaths would be, excluding all doubtful cases, much larger. He believes also that were such information collected throughout the whole of Hindoostan, it would be found that more than 20,000 persons die annually from snake-bite.

The result of his investigations in India has been, we think, to show that, so far, no agent or antidote, as that term is commonly understood, has been found effective in neutralizing the action of snake-poison. We think it is also pretty clearly demonstrated that death is caused in most cases, at all events where a full quantity of the virus has been injected, by its action on the nerve-centres, though whether on them alone, or also on the peripheral distribution of the nerves, or on the muscles themselves, or the exact extent to which each is affected, there may be some difficulty in determining. The futility of all the methods of treatment hitherto had recourse to is probably explained by the mode of death: their inutility had long

since been demonstrated by Fontana, who, ninety years ago, among other things, showed that the outward and inward use of ammonia, as well as its injection into the veins, was as powerless for good as were all other remedies.

There is apparently some analogy between the nature of the action of the cobra-virus and that of curara, death in both cases being brought about by arrest of respiration through paralysis of the respiratory apparatus.

In the case of the curara it has been demonstrated by experiment that this is due to paralysis of the peripheral distribution of the motor nerves; and it has been further shown that if respiration be continued artificially for a sufficient length of time, perfect recovery may take place, as we have ourselves observed, the poison being eliminated from the system, and not having, during its presence, so far compromised the integrity of the parts of the nervous system where it took effect as to interfere with a resumption of their functions after its removal. Now it is evident that artificial respiration and the use of any remedies that may expedite elimination, with the application of artificial warmth to sustain temperature up to the normal standard, are the measures which may be regarded as antidotal in a rational sense to this form of poisoning; and such they have proved themselves to be; for if an animal apparently dead from curara-poisoning be kept warm and artificial respiration be kept up for some hours, it will perfectly recover.

It is in the application of similar principles that we may hope to realize a similar result in cases of snake-poisoning; and it is with this object that the investigations by Dr. Lauder Brunton and Dr. Fayer, since his return to England, of which the present paper is an instalment, have been pursued.

Our investigations so far confirm the opinion by Dr. Fayer already recorded, that death is due to the action of the poison on the nerve-centres, to which it is conveyed by the blood with terrible rapidity when the injection of the poison takes place into a large vein like the crural or jugular. But we have not yet arrived at absolute conclusions as to the extent to which this neurotic action is carried, whether it be localized in the nerve-centres only, or whether there be, and to what extent, any action on other portions of the nerve-apparatus.

Our experiments so far, though pointing distinctly to the centres as the seat of its action, in some cases seem to imply that the nerve-periphery and perhaps even the muscles themselves are involved; but on this head, for the present, we reserve the expression of a positive opinion.

With reference to remedial measures in cobra-poisoning, we would remark that, so far as our experiments have as yet gone, artificial respiration has certainly had the effect of prolonging life; and without committing ourselves to any opinion, we would say that we would not yet abandon hope that it may, as in the case of the curara, even save it altogether. This must of course depend on, first, the nature of the action of the poison on the nerve-apparatus—that is, whether it be of a transient or permanent character. Is it, for example, like curara, which though it destroys the power of the peripheral extremity of the motor nerves during its presence, yet leaves them uninjured and capable of resuming their functions after the poison is removed (as it may be) by elimination, life being supported by artificial respiration during that process?

If so, and the cobra-poison, even though antagonistic and annihilative of the action of the nerve-centres and peripheral distribution or of the muscular irritability itself, be only so whilst it is present, and would, if removed within reasonable time, leave the nervous apparatus or muscles in a condition to resume their operations, then, if elimination could be carried on whilst respiration is artificially sustained, we might hope to succeed eventually in cobra as in curara poisoning.

Or could we, indeed, conceive of and find any agent so subtle as to overtake and neutralize the virus whilst it is in the system, and before it should have compromised the nerve-centres or other parts, then we should have the antidote which has been so long sought for, but yet, we fear, not found.\* We do not now wish to speak of the action of the cobra-virus as it operates secondarily on the blood, either in those cases where great vigour of the animal or smallness of the dose have enabled the creature to resist the immediate and deadly neurotic effects of the

\* Fontana thought he had discovered such an agent in the "pierre a cauter" (caustic potas). He says of it:—"Mais on peut point douter cependant de l'efficacité de ce remède, et on peut affirmer que la pierre à cauter est le vrai spécifique de ce terrible venin."—*Sur les Poisons*, p. 324 (Florence, 1781).

This agent has been tried in India, but has not proved of any service in cobra-poisoning.

poison. Such cases are to be classed among other septicæmiæ, and are apart from that we are now discussing.

The question resolves itself into three points of inquiry:—

1st. Is the nature of the virus such that we may hope to find any agent that may overtake, neutralize, and so render it, (the virus) harmless or inert?

2nd. Does the virus exert only a temporarily pernicious action on the ultimate structure of the nerve-centres or other parts of the nerve-apparatus? *i.e.*, is it only inhibitory or hurtful during its presence in the blood, but if removed would leave the nerve-apparatus in a condition to resume its functions (such is curara), or does it enter into some permanent composition or union with the nerve-elements? or, 3rd, does it so modify their arrangements as to render them permanently incapable of resuming their functions, even after the poison has been eliminated, if it may be so removed, as we know other poisons may? Such, we fear, may be snake-poison!

If the first proposition be correct, then in some subtle chemical agent, or, if the second, in artificial respiration and eliminant action we may have hope of success.

If the third, what chance have we beyond that of sustaining life as long as artificial respiration be maintained? for if the nerve-apparatus be permanently injured, no resumption of its functions can take place. Whichever of these propositions be nearest the truth, there must still be a condition in which, from the smallness of the quantity of virus inoculated, the recovery is possible—one in which the full lethal effect of the virus is not produced. In such cases, no doubt, remedial measures may be of avail.

The results of investigations in India have led to the conclusion, then, that death is brought about by the action of the poison on the cerebro-spinal nerve-centres, paralyzing them, and in some cases, where the quantity of virus was large and introduced into the circulation through the medium of a large vein, acting directly on the ganglia of the heart, causing arrest of its action. In those cases where the quantity of virus inoculated is smaller and of less intensity, according to the condition of the snake or its species (the poison of some genera being less active than that of others), secondary changes, though of what precise kind we are not yet prepared to say, occur in the blood itself, but allied in character to that of other blood-poisons and probably of a zymotic nature. We would merely for the present remark that, in the first class of cases, we believe that remedies or means of treatment other than those which may be of a preventive character are as yet of no avail, whilst in the second it is probable that they may be of some efficacy. So far we believe little more has been done than to go over ground that has already been traversed by previous observers, who have come to similar conclusions that most of the reputed antidotes have been powerless, and that where there has been an appearance of success, it has depended not on any antidotal or antagonistic action of the remedy so much as on the fact that the quantity or quality of the poison was defective; and how this may be explained, Dr. Fayer has endeavoured to prove by showing that the snake may have been exhausted, that its poison may be deficient in quantity or quality, or that it may have wounded without inoculating sufficient of the poison to cause death, or more than to cause slight poisoning, and probably that, by a sphincteral arrangement of fibres, as pointed out by Dr. Weir Mitchell to exist in the rattlesnake, the snake may have the power of imbedding its fangs without shedding its poison at all.

Much virtue has been recently attributed to one of the oldest and most trusted of all antidotes—ammonia; but it was long ago shown by Fontana by repeated experiments that the injection of this agent into the veins, as well as its internal administration and external application, were powerless (as may be seen by reference to the following\* pages of his works), so it has proved in all the experiments made with it in India. Any complete and satisfactory means of resisting, antagonizing, or eliminating the poison and of saving life are, we fear, still unknown; and it is in the hope that by determining the physiological action of the poison we may make some advance in our knowledge of this important subject, that the following investigations have been undertaken with cobra-virus sent to us from Bengal, and of which we hope to receive continued supplies from Mr. Vincent Richards, of Balasore, who, at our request, is also carrying on a series of experiments on the subject.

\* 'Traité sur le venin de la Vipère,' vol. i. pp. 108, 109, 118, '20, 124, 129; vol. ii. pp. 5, 6, 7 (Florence, 1751). 'Opusculi Scientifici,' Letter iv. pp. 125 et seq.

#### Appearance and Chemical Characters of Cobra-poison.

The poison when fresh is a transparent, almost colourless fluid, of a somewhat syrupy consistence, and not unlike glycerine in its appearance. When quickly dried it forms a transparent mass of a yellowish-brown colour, and resembling some kinds of gum-arabic. The poison may be kept in a fluid state for some months without undergoing any change, but after a certain time it decomposes.

During decomposition it gives off a quantity of gas, which has been ascertained by Dr. Armstrong to be carbonic anhydride, and at the same time acquires a dark brown colour and a disagreeable odour. The dried poison may be kept for a much longer time without undergoing any apparent change.

The chemical constitution of the poison has been examined by Dr. Armstrong. He has not been able to separate from it any crystalline principle. It is partially coagulated by heat; mineral acids produce in it a gelatinous precipitate; absolute alcohol throws down a white gelatinous precipitate; a drop of it evaporated with a little sulphate of copper solution and then treated with caustic potash gives a violent coloration. These reactions show that the chief constituent of the poison is an albuminoid body. On an ultimate analysis being made, very little difference was found to exist between the fresh poison, the alcoholic precipitate, and the alcoholic extract. This is the only ultimate analysis of the poison of any snake which has yet been made, so far as we know. We quote the results of it, and give the composition of albumen for comparison.\*

Crude poison.	Alcoholic precipitate.	Alcoholic extract.	Albumen.
Carbon, 43.55 ...	45.76	43.04	53.5
Nitrogen, 43.30 ...	14.30	12.45	15.7
Hydrogen ...	6.60	7.	7.1
Sulphur ...	2.5		
Ash ...	traces.		

We have recently received from Bengal some cobra-poison dried and in appearance resembling dried gum. On this we hope to report on a future occasion.

Although there is little difference between the composition of the alcoholic precipitate and extract, there is an immense difference between their physiological actions, the extract being a virulent poison and the precipitate almost inert. It is to be observed that the poison examined by Dr. Armstrong had already begun to undergo decomposition; but if it should be found by further experiments that the properties of the extract and precipitate from perfectly fresh cobra-poison are the same as those of the poison he used, it will form a notable distinction between the poison of the cobra and that of the rattlesnake. The precipitate thrown down by alcohol from the poison of the rattlesnake has been ascertained to be active, while the alcoholic extract is inert (*vide* Weir Mitchell, "Physiology and Toxicology of the Venom of the Rattlesnake," Smithsonian Contributions, 1860, p. 36).

We have experimented on four different samples of poison sent from Bengal. The first was originally a clear transparent fluid; but after keeping it decomposed, and became almost black, as already described. It retained its fluidity and activity to the last. The third sample was of a light-brown colour, quite solid, and resembling dry hard cheese in its consistency. The second and fourth consisted of a clear, thin, transparent fluid and a white curdy precipitate. None of these specimens had the same activity as the first; they produced similar symptoms, but much less marked.

*Effects of the poison.*—The local effects of the poison are partial paralysis of the bitten part, occasionally pain in it, ecchymosis around the spot where the poison has been introduced, and sometimes in other and distant parts, and, if the animal survives for some hours, infiltration and perhaps incipient decomposition of the tissues and hæmorrhagic discharge.

\* Dr. Armstrong in his analysis does not appear to have arrived at the same conclusions as the Prince of Canino (*L. Buonaparte*), who detected the presence of a peculiar principle perhaps allied to ptyaline, to which he gave the name *Echidnine* or *Viperine*, in addition to fatty matter, salts, albuminous and mucous substance. It has been suggested by Prof. Busk (*vide* Holme's 'System of Surgery,' vol. v., p. 941) that the venom may reside in a principle analogous to, though differing from, ptyaline. We would not, however, regard Dr. Armstrong's analysis as conclusive, but hope to have the result of further examination of larger quantities of the virus.

The general symptoms are depression, faintness, hurried respiration and exhaustion, lethargy, nausea, and vomiting. In guineapigs and rabbits peculiar twitching movements occur, which seem to represent vomiting in them, and occasionally, in fact, guineapigs do vomit. Dogs vomit, are salivated, and present an appearance as if the hair had all been rubbed the wrong way, "staring." As the poisoning proceeds paralysis appears, sometimes affecting the hind legs first and seeming to creep up the body, and sometimes affecting the whole animal nearly at the same time. There is loss of co-ordinating power of the muscles of locomotion.

Hæmorrhage, relaxation of the sphincters, and involuntary evacuations, not unfrequently of a sanguineous or mucosanguineous character, often precede death, and it is generally accompanied by convulsions.

In fowls the appearance is one of extreme drowsiness; the head falls forwards, rests on the beak, and gradually the bird, no longer able to support itself, rolls over on its side. There are frequent startings, as if of sudden awaking from the drowsy state.\*

The effects of the poison upon dogs, guineapigs, and rabbits are illustrated by the following experiments.

The poison which was first sent home and still remained perfectly liquid, but had become of a dark brown, almost black colour, and somewhat inspissated, was used.

(To be continued.)

#### THE ELECTRIC CAUTERY IN THE TREATMENT OF CYSTIC GROWTHS OF THE NECK.

In the "Bulletin General de Thérapeutique" for 1873, at page 321, Dr. A. Amussat gives the particulars of two cases of cystic growths in the neck which he cured by means of the electric cautery.

In October 1869, Dr. Amussat was consulted about the case of a gentleman, aged 69, who was suffering from a fluctuating indolent tumour, extending from the sternum to the angle of the jaw on the right side of the neck.

A puncture was made into the tumour with a small trocar, and a quantity of dark chocolate-coloured fluid evacuated. The diagnosis of a sero-sanguineous cyst was made.

In 1866 some symptoms of paralysis had been observed in the patient, the mouth had been drawn to one side for a time, but the limbs were not affected, though there was slight loss of power in the legs. Otherwise the patient's health was very good.

The cyst was allowed to refill, and a month after the exploration Dr. Amussat cauterized the interior of the tumour in the following way: The patient was seated in a chair and a long trocar passed obliquely upwards through the tumour from the inner extremity of the clavicle, emerging behind the angle of the jaw. The stylet having been withdrawn, a piece of platinum wire was passed up through the canula, and left with the ends hanging out at the two openings, when the canula was withdrawn. The contents of the tumour again were drawn off through the canula. The ends of the platinum wire having been connected with the terminals of an electric battery, and the wire made red hot, the interior of the cyst was cauterized by moving the red hot wire about inside it.

Cold dressings were applied, and the patient allowed to walk about as usual. There was no subsequent constitutional disturbance of any kind.

Four days after the operation the platinum wire was removed, and simple dressings applied to the two small openings. Six months afterwards the only traces of the former diseases were two very small cicatrices at the spots of entrance and exit of the wire.

The second case was that of a lady who had a small cystic growth in the neck, the size of a walnut, situated directly over the common carotid. The patient declined to submit to any operation that would leave a scar. Electro-puncture was determined on, and every other day two fine steel needles were introduced into the tumour and connected for five minutes with a small Bunsen's battery. The strength of the battery was gradually increased; after a time on the alternate days tincture of iodine was applied externally. Forty-five sittings were necessary to effect a perfect cure. Dr. Amussat attributes the

\* In cases where the quantity of poison injected is large, and it is at the same time very active, the bitten animal small and weak, or if inoculation has taken place into a large vein, death is almost sudden, as if it were from shock. In such cases the cardiac ganglia are also probably paralyzed; at all events the heart suddenly ceases to beat.

cure to the electro-puncture, as iodine and other discutients had been previously applied without success.

C. H. JOUBERT, M.B., F.R.C.S.,  
Surgeon.

#### CIVIL SURGEONS AND CHARITABLE DISPENSARIES.

THERE is an Arabic newspaper of considerable respectability, published in Lahore under the auspices, I believe, of the *Anjuman-i-Punjab*, called the *Naful Azim*. The compiler of the Native Press Selections notices an article therein on our present dispensary system, which, I think, contains some very sensible remarks. Dispensaries do not receive the attention which they should command from Civil Surgeons. These charities are entrusted to the care of native doctors or hospital assistants, who confine their exertions to the practice of lithotomy, and leave the medicine department to the dispensation of Providence and the compounder. I have more than once seen strange looking and stranger tasting mixtures lurking behind the pharmaceutical bottles on the greasy cupboard of an out-dispensary. Such *mélanges* are usually composed of herbs and animal matter, sometimes injurious, but as a rule quite harmless, prepared in accordance with the prescriptions of the Bedi or Unani healing arts. The compounder generally apologizes for their presence by explaining that in some obstinate case of fever or other ill, when all "Sirkari" medicines had failed, a fakcer had recommended the trial of one of these time-honored remedies. They are often supposed to effect a cure, provided the patient believes; for in medicine, as in religion, faith alone can make one whole. Up to the present our pharmacopœia has worked little way on the credulity of the native, who, however, is a firm believer in our surgical skill. If by accident you stumble across a candid native he will tell you, "except quinine, sahib, you have no medicine worth swallowing; but you can heal a wound or cut a leg off quicker than Messiah." But the *Naful Azim* only finds fault with our dispensaries for the incivility and carelessness of the officials, who are accused of looking at a patient and prescribing for him without asking any question as to his ailment. No wonder, then, that their faith in our art is shaken when, mayhap, a man with a bad stomachache gets an alum gargle for his throat, which on swallowing in nowise relieves his sufferings. We know that a railway guard, or a subordinate police officer, or a tesseel chuprassie, or any other native in authority, is guilty ordinarily of an insolent use of his power over his fellow-countrymen, unless duly restrained. It is, therefore, unfair to expect that hospital assistants and compounders should form an honorable exception to the rule by reason of the high-minded nature of their profession or otherwise. Consequently, I say, let as active a supervision as possible be exercised over their doings; and this brings me to the consideration of another subject, which is closely allied to the above, namely, the use and misuse of Civil Surgeons' services in the Punjab, and, I suppose, in India generally. Why are the services of a doctor supposed in India to be absolutely necessary for the management and control of the discipline and manufactures of a jail? It does not appear that in their early professional training they attend lectures or otherwise acquire a special knowledge in the art of carpet-weaving or paper-making. And yet in nearly every civil station the medical officer finds himself in charge of an anomalous institution, which requires constant supervision at his hands, and which eats into his time so seriously as to leave him but little leisure to indulge in the practice of his legitimate professional duties. As a matter of humanity it may be advisable that the jail hospital be visited daily by a European medical officer, though I am unwilling to admit that criminals should receive more attention as regards their bodily wants than the poor but respectable class which cries for help at the dispensary door. But it appears to be a waste of power when a doctor is entrusted with any duty outside his own special line, which could be equally well performed by the ordinary executive agency in the district. Three hours a day spent in examining jail accounts and returns, or in supervising stone-breaking, or in inquiring into a theft of flour, or the illegal entry of tobacco, being interpreted, means three hours less at the dispensary or in the city on work which must be either done by the Civil Surgeon or remain undone. My suggestion is that the executive charge of a jail be made over to one of the subordinate Magistrates of the district, except in the case of a