TABLE XIV.—*At all Ages.*

	No.	Cures.	Deaths.	Mortality.
Cheselden	213	193	20	1 in 10.65, or 9.38 p. c.
Dupuytren	95	76	19	1 in 5, or 20 p. c.
St. Thomas's Hospital ..	124	110	14	1 in 8.85, or 11.29 p. c.
Bristol Infirmary	354	275	79	1 in 4.48, or 22.31 p. c.
15 London hospitals	186	146	40	1 in 4.65, or 21.50 p. c.
28 Provincial hospitals ...	222	195	27	1 in 8.22, or 12.11 p. c.
Norfolk and Norwich H.	910	792	118	1 in 7.71, or 12.96 p. c.
Birmingham General H.	122	112	10	1 in 12.2, or 8.19 p. c.
Radcliffe Infirm., Oxford.	54	46	8	1 in 6.75, or 14.81 p. c.
Keith	208	165	43	1 in 4.83, or 20.66 p. c.
Total	2488	2118	375	1 in 6.58, or 15.19 p. c.

TABLE XV.—*Number of Cases at Different Ages.*

	Und. 21.	21 to 40.	41 to 60.	Abov. 60.	Total.
Cheselden	167	22	17	7	213
Dupuytren	54	14	9	8	95
St. Thomas's Hospital	84	13	13	14	124
Bristol Infirmary	200	69	65	20	354
15 London hospitals	136	16	17	16	186
28 Provincial hospitals	148	28	22	24	222
Norfolk and Norwich Hospital ...	455	119	190	146	910
Birmingham General Hospital ...	96	5	16	5	122
Radcliffe Infirmary, Oxford	34	6	8	6	54
Keith	22	9	58	119	208
Total	1397	301	415	365	2488

TABLE XVI.—*Percentage of Cases at Different Ages.*

	Under 21.	21 to 40.	41 to 60.	Above 60.
Cheselden	78.40	10.32	7.98	3.28
Dupuytren	56.84	14.73	9.47	8.42
St. Thomas's Hospital	67.74	10.48	10.48	11.29
Bristol Infirmary	56.49	19.49	18.36	5.64
15 London hospitals	73.65	8.60	9.13	8.60
28 Provincial hospitals	66.66	12.61	9.90	10.81
Norfolk and Norwich Hospital ..	50.00	13.07	20.87	16.04
Birmingham General Hospital ..	78.68	4.09	16.11	4.09
Radcliffe Infirmary, Oxford	62.96	11.11	14.81	11.11
Keith	10.57	4.32	27.88	57.21
Of all cases	56.14	12.09	16.68	14.67

COMPRESSION OF A CONSIDERABLE PORTION OF THE SKULL-CAP IN AN INFANT SIX MONTHS OLD.

By W. A. ELLISTON, M.D., Ipswich.

A FEW months since, an infant, aged six months, was brought to my house, in a state of collapse and vomiting, having fallen from the arms of the nurse-girl upon a flight of brick steps. Upon examining the child, I found that a large portion of the cranium, a surface of two and a half inches by one and a half inches, and extending over and including the posterior portion of the temporal bone, and the upper part of the parietal and occipital bones, had been driven inwards upon the brain, leaving a considerable depression, into which half a hen's egg cut in the longitudinal direction could have been easily laid. I naturally gave an unfavourable prognosis, and had some doubt whether I ought not to have interfered surgically at once. However, upon seeing the child one hour later in the evening, I found the depression less, the child no worse, and therefore decided that it would be better to wait for more urgent symptoms. I accordingly sent the child into the East Suffolk Hospital, in order that she could be carefully watched. Two days later, she was discharged from the hospital much improved; and, one week later, the depression had almost disappeared.

MASSAWAH:

CLIMATE OF THE SHORES OF THE RED SEA; EFFECTS ON EUROPEANS; PREVENTABLE DEATHS.

By HENRY BLANC, M.D., M.R.C.S.E., F.R.G.S., etc.,
Staff-Assistant-Surgeon, Bombay Army.

PART I.

THE Portuguese missionary, Lobo, gives a very startling account of his misfortunes at Massawah at the beginning of the fifteenth century. The Turks were then the open enemies of the Christians, and the hatred they professed for them was not manifested, as in the present day, by half-muttered imprecations, but vented itself in a form more suitable to their tastes, and to the teachings of the Koran. Fetters and a dungeon, if not a cruel death, was the fate which the Christian might rightly expect, should he be unfortunate enough to fall into the hands of the all-dreaded Muslims. Massawah and Souakin, the two ports on the Red Sea, through which it was necessary to pass before crossing to the highlands of Ethiopia, unless the longer, and as yet dangerous route by the Nile was adopted, were for the Catholic missionaries—those pioneers of African explorers—invested with more dread and terror than the blood-stained plateaux where, for half a century, a cruel religious war alternatively made martyrs of Copts or Romans, according to the religious tenets adopted at the time by the Abyssinian Emperors.

Bruce himself, at the end of the last century, had still to contend there with serious difficulties; and had it not been for his *pluck*, perseverance, and, above all things, for his *medical knowledge*, he would certainly have paid with his life for his love of adventures; and, murdered in the lowlands bordering on the Red Sea, never returned to his own highlands to relate his very interesting, and so unjustly criticised, narrative. But, without going so far back as the well-known traveller I have mentioned; even passing over Lord Valentia's and Salt's unpleasant experiences of the inhabitants of that inhospitable coast, we find all modern travellers—even Mr. Plowden, our late Consul at that port—all complaining of the rapacious character of the natives, and of the covert hostility of the Turkish authorities of the island of Massawah.

On the arrival at that port, in July, 1864, of Mr. Rassam and myself, aware of the difficulties, to say the least, which the authorities always placed in the way of travellers desirous of proceeding into the interior of Abyssinia, we were not without some fears that our mission would experience there its first troubles. However, the very wise precautions taken by the English envoy, his great knowledge of Eastern races, his timely presents, his perfect tact in dealing with those curious specimens of politicals, at once smoothed the way; and from the Pacha's divan, to the grass hut of the Naib of Arkeeko, only words of praise proclaimed the advent of the English Effendi. But at the same time, although I would fain not speak of myself, there is no doubt that this good understanding was also greatly influenced by the practice of medicine, and that Mr. Rassam's companion, in his more humble sphere, had also his share, not merely on that occasion only, but many times afterwards, in winning the confidence, and, in some degree, the affection, of the natives. A *knowledge of medicine* is, in those Eastern lands, *after money*, the most useful of passports; and I was not many days at Massawah before high and low, rich and poor, claimed my medical attendance.

Massawah is, for an European (taking the expression in its widest sense), if not a deadly place, at least one where his chances of life are limited indeed; not that any serious endemic disease usually prevails there—on the contrary, so far the locality might be considered healthy. Fever, it is true, now and then makes its appearance after a shower of rain, and occasionally assumes, in the half-starved native, a pernicious character. During our stay at the coast (about thirteen months), we ourselves never suffered from it; but a few cases broke out amongst our followers, affecting a mild remittent or intermittent type, and quickly yielded to treatment. The danger lies in the oppressive and constant heat of the weather; not only this elevated temperature predisposes to tropical affections, but so weakens the body, so exhausts the frame, that a state of utter prostration is at last brought on, that nothing, except an immediate change to a more temperate clime, can avert an almost certain death. We had ourselves suffered to some extent from that influence: we disliked, on the whole, the place so much, that I doubt whether, if the option had been given to us, we would not have preferred to dwell fettered prisoners in the highlands, rather than free

men under the broiling sun of Massawah. During the worst months, from May to September, rest, night or day, is scarcely possible; to eat is a burden; a few minutes' stroll in the evening is a fatigue. Fancy poor, wretched Europeans, living in a tent on the sea-shore, the thermometer at 9 A.M. often 95° , rising during the day to 115° ; and that, day after day, for many months, seldom even a passing change; and add to the influence of a scorching, blazing sun, the absence of vegetables, brackish water, bad or no bread, inferior meat, and the wonder is, not that the European resists, but even that the natives can live, and, seemingly, prosper under such conditions. The Arabs have a good proverb illustrating their appreciation of three not very select localities: Muscat, they say, is the frying-pan; Aden, the fire; and Massawah . . . the place where wicked people go! Nor can the Arabs be said to be wrong when they express themselves so strongly on the subject. There are, indeed, no joys for them, nor for the white men, on that small coral island, bathed by the warm waves of the Red Sea, and only a few hundred yards distant from the mainland; a sun-burnt shore, shelving gradually away in darker outlines, up to the glorious highlands of Abyssinia, looking so grand from the barren coast, so noble, so bold; gardens in the midst of a wilderness, but over whose gates can be read Dante's fearful warning, "*Lasciate ogni speranza voi che entrate.*"

The town of Massawah is but a dismal assemblage of wooden huts, with a sprinkling of a few more substantially coral-built houses, so painfully white under the bright sun, that we are surprised that ophthalmia is not even more common. The place offers but few attractions to the traveller; none, I should have said; and all would gladly pass on as quickly as possible through that ordeal of fire. Alas! Turkish red tape is there; and many who started full of hope and courage for some distant tour, never went further on, and died in sight of the promised land. But for the Dankali, the Shoho, the Habab, and the roving Bedouin of the Samhar, the case is very different: for them Massawah is a noble city; the head-quarters of the stern government they respect and fear; the site of the narrow, crowded, fly-swarming bazaar, where all seek for profit or pleasure; where the merchant brings his cattle, and the peasant his grain. The savage beau, his locks well plastered with tallow, enjoys the bright sun melting the grease, and, still more, the Frank's *araki* or a loud and noisy flirtation with some of the pretty water girls. The water, I have said, is brackish. It is conveyed, morning and evening, to the town in leather bags by the Bedouin girls of the surrounding villages. These, oases without trees, owe their existence to the presence of the wells, the sole traffic and occupation of the great majority of the inhabitants of those hamlets. But the island boasts of an independent, though limited, supply of sweet water. Half the island is covered by the town; the remainder is set apart for tanks and the burial-ground—a case of surface-drainage with a vengeance! Moreover, all the sweepings of the town are carefully heaped between tomb and tank. Once or twice a year, a heavy tropical shower breaks over the place, and quickly fills up the tanks. These are all private property, so that this highly-prized water—an infusion of every thing, from corpses to untold filth—is carefully preserved by a few favoured individuals: and, dreadful contradiction to all hygienic laws! no typhus, no cholera, no pestilential disease follows; on the contrary, being generally wealthy, the drinkers of that disgusting water are fat, sleek, and as rosy as a black man can be!

The highlands in the vicinity are within the range of the tropical rains—a season extending from June to September; nevertheless, although the sky is generally overcast, it seldom, if ever, rains during that period. It seems as if the rain could not possibly fall, except occasionally in the winter months, on that desolate, sun-scorched plain; and though the lower plateaux, such as Ailat, six hundred feet above the sea, are at times visited by heavy showers, there the cooling rain seems to have met with its last barrier; and the north-east wind carries along the coast, and to the lonely island, nought but clouds of dust, whirled with fearful violence by these unwelcome hurricanes—the sand-storms, so common along the shores of the Red Sea. To sum up, the climate of Massawah, and of the surrounding lowland, is essentially hot and dry; scorching, oppressive, during nine months of the year; somewhat tempered on the island and near the coast by the sea-breeze, and more bearable during the so-called cold months.

The Pacha, a middle-aged Turk, claimed my services almost the very day we arrived. It would be wrong to say that he was very ill—he was simply dying from sheer exhaustion. I found him in bed, the very image of a living skeleton. I examined him carefully, but could find nothing beyond excessive debility, and a certain amount of dyspepsia, brought on, probably, by immoderate smoking. The poor fellow had clung to his pipe as his only solace; for months he could not eat; now and then, he would try some extraordinary dish or the other, at the suggestion of some of his visitors, or even some more wonderful remedy, but both were of no avail, so he returned again to sipping small cups of

coffee, and smoking his dear latakia. Luckily, he had a mind above petty prejudices. I believe, even in good health, he would not have spurned the cup that cheers and *inebriates*; and, far from making any objection, his Moslem eye brightened when I spoke to him of brandy, port-wine, sherry, etc. I gave him, at the same time, some bitter tonics. Cold sponging was practised all over the body, morning and evening, and some good broth and little fancy dishes were daily sent to him from our steamer. The coffee and pipe I did not even attempt to forbid; it would have been useless; but I limited the use of both to the utmost of my power. Under this treatment, he shortly so far recovered as to be able to walk about his room; and when at last he decided on taking, as I had recommended, a trip to sea, he was strong enough, leaning on the arm of one of his followers, to walk three hundred yards from his divan to the port. He crossed over to Jiddah, much improving by his trip. I heard nothing of him until a year afterwards, when, on our way to Suez, our steamer put into that port, being short of coals. What was my astonishment on seeing my former patient (he held then, it appears, a very high appointment in Arabia), who had heard of our arrival, walking on board, and, French fashion, forgetting that I was "but a Christian, and the son of a dog," jump on my neck, kiss me, and, with tears of joy in his eyes, exclaim, "God be praised, I have seen my saviour again!"

The European community at Massawah, during our stay there, consisted of a few residents, and some travellers on their way to the highlands—together about a dozen, including the last-mentioned. Out of this limited number, five died—a fearful average. I regret to say, that none of those ever came under my care. I either simply heard of their death, or was called in when it had already taken place. The first who died was the old Roman Catholic bishop. He died suddenly, and I never knew exactly from what cause. A few days afterwards, a lay brother of the same mission fell a victim to debility and exhaustion. The third case was that of a young German, who, a few days before, had arrived with two companions, all intent on proceeding into the interior, in order to make collections of natural history for some museums in the north of Europe. He imprudently started from Massawah (it was in August) in the middle of the day, clad in a thick black coat, which he had put on to take leave of his consul. Arrived on the mainland, he amused himself, while his camels were being laden, by looking after crabs on the beach; but, before long, he fell down, killed almost on the spot, by sun-stroke. I was sent for at once, but found him dead on my arrival. The fourth, a Swiss, a young man, clerk at the consulate, died also suddenly, from heat-apoplexy, brought on by intemperate habits, and imprudent exposure and long walks in the sun. The fifth, an Armenian, died from cholera, or rather from fear of it, just as we were leaving Massawah for the highlands. He was staying at a village four or five miles from the island, and I only became aware of his death through the reports of the natives. I have mentioned these cases, as they well illustrate the fact, that three at least out of the five deaths might have been prevented by a few wise precautions; and that, under such a climate as the one of the Red Sea, a great many casualties would be avoided by a more extended knowledge of the hygiene of tropical climes.

Exposure to the direct rays of the sun is bad, and ought, as a rule, to be carefully avoided—religiously so, from ten to three, during those hours of intense heat: even before and after that time, a certain amount of precaution should never be omitted. First of all, black, red, or any dark-coloured cloth clothes should never be worn; and although the head should be protected by a good covering, and the many folds of a white muslin band twisted around the hat or cap, turban fashion, still the chances of sun-stroke will not be so much in relation to that wise protection as to the nature and quality of the clothes themselves. A flannel shirt, and a good, thick, white cotton coat, are, above all things, the best. It is an error to believe that, the head once well protected, there is no danger—a *great, deplorable mistake*. The effects of the rays of the sun on the body, specially on the spine, are much more dangerous; and if ever I found myself in such a position as to be unable to fulfil both conditions, I would not hesitate in guarding against the greater danger, and protect the body in preference to the head. It is not correct, either, to assert that very light clothing is more agreeable: flannel and cotton—both bad heat-conductors—are infinitely more pleasant, after a while, than the first impression produced by the muslin shirt and the very thin linen coat; both, of late, very much approved of. The neck should be as free as possible, no part of the clothing interfering with the circulation in any way. A large cotton or silk band should always be worn around the loins, and the whole body, if possible, protected from the direct rays of the sun by a white umbrella. Last, but not least, the European should never walk any distance in the sun. Ride, always ride. The refraction from the heated sand is far more painful than the direct rays of a tropical sun,

if not as dangerous. A few feet above the ground, the evil effects of that radiation are far less; and also, by riding, the great exhaustion and excited condition of the circulation are both avoided.

As far as my experience goes, I believe that there is very little danger of sun-stroke, even in such places as the coasts of the Red Sea, if the flannel shirt, the white cotton coat, the silk or cotton band, the umbrella, and the mule, horse, or camel, be, one and all, never put aside.

Referring to the casualties I have mentioned, I must state here, although I shall have occasion to consider the subject again on more general principles, that certain details of regimen must also be carefully attended to. To face the midday sun after a heavy meal (still possible for the new arrival), or fasting, are both equally injurious. A cup of coffee and a biscuit are quite sufficient, but also should be deemed imperative, before venturing in the sun. On a par, if not foremost, in danger, comes under the same circumstances the use of alcoholic drinks. I have seen, in China, a simple glass of brandy, in the case of a very abstemious man, cause sun-stroke and death. Never drink anything stronger than tea or coffee before the sun drops towards the west! not that stimulants, in moderation, are entirely to be set aside; on the contrary, in the afternoon, the European will thoroughly enjoy his ride after a moderate meal, washed down with claret and water, or a glass of beer; and in the evening, a glass of brandy and water is more a necessity than a luxury. But beware of the morning dram! Woe to the habitual drunkard; waking in the morning, weighed down by the last night's debauchery! No going out in the sun for him! and, even should he remain quiet, trusting to the protection of his hut or tent, heat-apoplexy will some day seek him there—a ready prey for ever-present death. Woe to the total abstainer! exhaustion and debility, though not so fatal as dissipation, end but too frequently in the same way. To avoid, as far as lies in his power, both sun-stroke and heat-apoplexy, the motto of the European traveller in the sunny East should be, "Be moderate in all things." Use, but do not abuse; and should he willingly transgress that golden rule, he may feel certain that his bones will lie, uncared for, by the wayside; home-friends, those dear to him, will lament his fate, and speak with horror of the dreadful African climate, whilst the unfortunate wanderer has fallen a victim, not so much to the climate itself, as to his carelessness or ignorance of the simplest, most elementary rules of that important knowledge—how to avert and control the morbid influences that surround him on all sides.

NOTES FROM OPHTHALMIC PRACTICE.

By JAMES DIXON, F.R.C.S.,

Consulting Surgeon to the Royal London Ophthalmic Hospital, Moorfields.

I.—REMAINS OF PUPILLARY MEMBRANE IN AN ADULT.

THE following case appears to be worthy of record, as exhibiting a vestige of the pupillary membrane in a person of middle life. The persistence of any portion of this membrane, even in young persons, is a circumstance of extreme rarity. Dr. Cohn, in the *Klinische Monatsblätter für Augenheilkunde*, 1867, (p. 62) enters into an analysis of the cases published by different authors, and dismisses all of them except five as originating in a faulty diagnosis. He describes four cases from his own observation. I think there can be no doubt that, in most of the instances reported, old adhesions, the result of by-gone iritis, have been mistaken for shreds of the membrana pupillaris. This membrane is originally attached not to the free edge of the pupil, but to that portion of the iris which is marked, at some distance from the pupil, by a more or less elevated ring of little tufts or nodules.

In the summer of 1867, a lady, aged thirty, consulted me for short-sightedness. The case was a very simple one, the myopia not in any high degree, and suitable glasses were all she required. I noticed a fine hair-like thread running obliquely across the pupil of the right eye, and at once recognised it as a vestige of pupillary membrane. It gave the patient no inconvenience, and indeed she could not be made aware of its existence under any illumination I could apply. Fig. *a* represents the eye with the pupil in its natural state, and Fig. *b*, after atropine. I had expected to find that, as the pupil dilated, while the two sides of the iris were held together by the little thread, the aperture would become irregular; but this was not the case to any appreciable extent. The iris, of a thoroughly healthy appearance, was of a rust-brown, and the filament was only a little paler in colour. At each end it had a bifid attachment, and looked like a portion of the proper fibrous tissue of the iris drawn out into a thread. Under the ophthalmoscope, the media and fundus of the eye presented nothing unusual.

PROFESSOR HUXLEY'S HUNTERIAN LECTURES ON THE ANATOMY OF THE VERTEBRATA.

Delivered at the Royal College of Surgeons of England.

LECTURE IV.

THE next point to consider is the process of development of the several sets of organs; and, first, the development of the skeleton. The skeleton consists of two parts—1, the Exoskeleton; and 2, the Endoskeleton. The Exoskeleton is again divisible into two kinds, according as it is either: *a*. A development of epidemic or epithelial structures, such as nails, hairs, feathers, scales in the horny lining of some stomachs, etc.; *b*. A development of the deeper structures—the dermis—such as teeth, the scales of fishes, etc.

The Endoskeleton may be also divided into two categories: *a*. Hard parts formed in the primitive layers of the germ, and called the "axial skeleton," such as the skull, the vertebral column, the ribs, and sternum: *b*. Hard parts formed in outgrowths from such primitive layers, and termed the appendicular skeleton, such as the bones and cartilages of the limbs.

The first development of the skeleton is axial, and consists in the formation of an elongated cellular rod, enclosed in a structureless sheath, and placed in the intermediate layer of the embryo immediately beneath the primitive groove before described. This rod is the notochord or *chorda dorsalis*, and it makes its appearance while the embryo is still but a membranous expansion.

The next objects that present themselves to the observer, are what are called the proto-vertebræ, which are condensations or thickenings of the intermediate layer, placed in pairs opposite each other, one on each side of the *chorda dorsalis*. These thickenings (when the embryo is viewed from above) present the appearance of quadrate patches, separated by intervals from each other and from the interposed notochord. The proto-vertebræ are not the direct precursors of the osseous vertebræ, but the greater part of each such quadrate thickening results in the formation of a mass of antero-posteriorly extended muscular fibres, the several quadrate masses of muscle being the foundations and primitive representatives of the erector spinæ. The first real rudiment of the future axial skeleton appears in the shape of cartilage, which arises towards the hinder edge and deeper part of each protovertebra. This cartilage then extends inwards and embraces the notochord (fusing with its fellow of the opposite side), also upwards into the dorsal lamina, embracing the neural canal, and downwards into the ventral lamina, the whole forming one continuous cartilage. In the chick, ossifications then arise in this cartilage close to the notochord (in the place of the vertebral centrum) in each cartilaginous neural arch, and in each descending or hæmal arch. Thus the vertebral centrum takes origin in the interval between each pair of protovertebræ. As to the modifications presented by the spinal column in different Vertebrates, in some the skeleton never advances beyond its very early condition in the chick, and consists mainly of fibrous tissue. In *Amphioxus*, the notochord persists, and the segments of the body represent protovertebræ, but there are small cartilaginous neural spines. In some fishes, as in the Lamprey, the Sturgeon, and *Lepidosiren*, the notochord also persists; but, in *Lepidosiren*, the neural arches and ribs are quite ossified—a condition very common in certain of the older fishes, *e.g.*, the *Pycnodonts*. In *Chimæra*, little rings of bone make their appearance in the sheath of the notochord, and, strange to say, there are two such rings for each neural arch. A more advanced development is that met with in most Fishes, some Amphibians, and certain exceptional Reptiles—*viz.*: the *Geckoes* and *Sphenodon* (*Hatteria*), where distinct bony vertebral bodies are formed, each such body being concave at each end. This development takes place—*e.g.*—in *Elasmobranch* Fishes, thus. The notochord becomes invested by rings of bone at regular intervals along its course. Growth then proceeds, but the soft notochord cannot increase in size, except in the intervals between the bony rings, which, by growth of the chord, become more separated serially from each other, and which receive a second bony coating of slightly greater extent than the first. This process is repeated again and again, and the result is, a series of bony vertebral bodies, each formed of concentric bony cylinders (so placed as to form two deep cups, one looking forwards, the others backwards); and these vertebræ enclose between their mutually applied concave ends, the swollen remains of the primitive *chorda dorsalis*. In those *Amphibia* which have such vertebræ (biconcave), each cup is lined with a greater or less quantity of cartilage. In certain salamanders, and in some birds, and mammals, there are opisthocœlous