

and the remainder of the letter, though translated by Colenso to throw ridicule on the people's religion, has evidently no bearing on the calamities and portents of A.D. 458-60, but refers to an earlier event.)—*Epistles of Sidonius Apollinaris*. Book vii. Ep. 1. (From Migne's *Patrologia*, tom. 57, p. 563.)

"There pervades, indeed, the vital way (or faith) not through the lands of Gaul only, but almost the whole world, the fertilising stream of these Rogation Day observances, and cleanses the earth infected with vices by the wholesome flux of an annual expiation. More special reason, however, have we in this same institution for service and rejoicing, because from hence in a manner it flowed for the benefit of all. From our source at the first it spread; and perhaps even (we may say) it pertains to some dignity or privilege, the first beginning of such an institution. At any rate, when an ineffable distress (*necessitas*) tamed down the proud hearts of our Viennese to this manner of humiliation, our Church, perceiving the cause of her chastisement (*egritudinis*), caught to herself not as chiefly before all others, but as alone among all, feeling the need there was for the present observance to be instituted, far more eagerly a remedy than a primacy (or precedence). And, indeed, the causes of the terrors of that time, I know that many of us recollect well (*recolere*). For truly the repeated fires, the frequent earthquakes, the mighty noises, threatened to add to such a cremation (*cuidam funeri*) of a whole world some equally prodigious entombment (*bustuale*). For in the populous haunts of men the tame appearance of the beasts of the forests was observed; God knows whether deluding our eyes or driven there by the portents. But whichever of these two it might be, it was perceived to be alike monstrous, whether thus in reality the wild natures of the beasts were tamed, or whether so frightfully in the views of the spectators phantoms of false visions could be formed. Amid these things various were the notions of the populace, and divers the opinions of different classes. Some, concealing what they felt, ascribed to chance what they would not allow to (be matter of) weeping. Others, of healthier mind, discovered truly the new iniquities (*abominabilia*) aptly agreeing to the natures and significance of the ills. For who, in the oft-seen fires, would not dread Sodomitic showers? Who, in the shaking elements, would not believe either falls of roofs (*culminum*) or openings of the earth to be at hand? Who, when seeing, or certainly thinking he saw, the naturally timid deer advancing through the straits of doorways, even to the sides (co'onnades) of the forum (*ad fori latera*), would not presage an impending doom of desolation?" (He then recurs, like Sidonius, to the story of the earlier conflagration of a palace or town hall, arrested by Mamertus, which leads to the confusion of these two calamities by all later chroniclers, and loss of memory of the eruptions, and showers of faville. — *Homily of Avitus concerning Rogations*. "How the Custom of the Rogations arose." (Migne *Patrologia*, tom. 59, p. 289.)

SOME years ago my attention was especially directed to the date of the latest eruptions in Auvergne, as usually supposed to be indicated by the appointment of the Rogation Days, A.D. 469, by Mamertus (rather than Mamercus), Bishop of Vienne. A reference to original authorities convinced me that there is no satisfactory evidence of anything beyond long-continued earthquakes of such severity as to drive the wealthier part of the population out of the city, and, as it would seem, the wild beasts into it. Much is said about fire, but the rhetorical and inflated expressions of those living nearest to the event may be applied to either volcanic or domestic conflagration; and there is great reason to believe that the latter only was intended, in the apparent absence of volcanic foci in the neighbourhood. These, according to Scrope's map, all lie at a considerable distance (if I recollect aright, twenty or thirty miles); and though it is of course possible that the site of some nearer outburst may have been hitherto unnoticed, the expressions used hardly warrant the trouble of any laborious search for it. Should any of the residents in the neighbourhood of Vienne be conversant with geology, they would be able to furnish decisive evidence on the subject. The original story is a curious one, but it has not lost in the telling.

Hardwick Vicarage, May 25

T. W. WEBB

The Approaching Transit of Venus

IN NATURE of the 4th of January last Mr. J. Carpenter gives an interesting sketch of the arrangements in progress for observing

the forthcoming Transit of Venus. He states that French and German astronomers have decided on establishing a station of observation at Muscat (Mascate) or at some place between that nasty little port and Teheran. Now, as a point along this line is considered so favourable by Continental astronomers, will you allow me through your pages to call Mr. Airy's attention to the peculiar advantages of Jask in this respect. Cape Jask, on the Mekran Coast, is situated, roughly, in lat. $25\frac{1}{2}^{\circ}$ N. and long. $57\frac{1}{2}^{\circ}$ E. We have here a large and intelligent English telegraph staff, and work a double line of telegraphs to Europe. We have three large stone-built bungalows (houses) with strong, flat, cement-covered roofs, which are approached by spacious staircases. The large bungalow, forming the clerks' quarters, is about 250 feet long, 20 high, and 40 broad. It is divided in the centre by a sort of tower, in which are situated the stairs leading to the roof. The latter would be a most convenient place for erecting the astronomical instruments, &c. There is no telegraphic communication with Muscat, and it is about two days' sail, with a fair wind, from Jask, which is the nearest telegraph station. Should the Astronomer Royal decide on sending out a couple of observers here, I promise them a hospitable reception and every assistance. The fortnightly mail steamers between Bombay and Bussorah, pass within fifteen or twenty miles of this place, and could be easily induced by Government to call in and land the party.

Mr. Latimer Clark, who visited this station towards the end of 1869, will, I daresay, if called upon, be able to give some further particulars, and can vouch for the accuracy of my statements.

J. J. FAHIE

Persian Gulf Telegraph Dept., Jask Station

Recent Climatic Changes

MR. HOWORTH'S letter on "Recent Climatic Changes" in NATURE of the 9th May, is most instructive and interesting, more especially to those who have visited the Arctic Sea; but on one point I must venture to differ from him, that is, when he expresses his belief that the Esquimaux migrated from the northward in consequence of the increasing rigour of the climate in high northern latitudes.

I have seen the Esquimaux at the mouths of the MacKenzie and Coppermine Rivers and at Repulse Bay in longitudes 135° , 115° , and 87° West, respectively. At all these places I found their traditional belief to be, that they came originally from the west, across a narrow sea (probably Behring Strait), followed the coast line eastward, then southward along the west side of Hudson's Bay; some of them making their way to the east coast of that great bay and to Labrador by crossing the comparatively narrow channels separating these places from Southampton, Mansfield, and other islands, at the entrance of Hudson's Bay.

As Victoria and Wollaston lands, and other places still farther north, were probably at that time (as some of them are at present) well stocked with game, part of these people in their eastward drifting would naturally turn to the northeastward, until they reached North Lincoln and Ellesmere lands in lat. 77° or 78° North, from which they probably crossed Smith Sound to Greenland, along the west shore of which they would then have gradually spread southward.

Thus the Skrellings who destroyed the Norse colonists of South Greenland, came, as Mr. Howorth says, from the north. Indeed, they could not have come from any other direction, except by making a long sea voyage, for which their frail craft (if they had any canoes at that time) were by no means well fitted.

That the "Saga" writers knew that Esquimaux were to be found in Labrador before they were seen in Greenland, goes far, I think, to support the view I have expressed; because, if coming from the west, they could much more easily and speedily reach Labrador than the southern parts of Greenland; whereas had they come originally from the north, the facilities for arriving at these places would have been reversed.

I have been told by one of the greatest authorities, perhaps the very highest, on such subjects, that it is not likely that the Esquimaux originally came from Asia, as the form of their heads differs most materially from that of the heads of those Asiatics whom in other respects they most resemble.

This seems almost an unanswerable fact or argument against the correctness of the tradition of the Esquimaux, and the theory I have advanced, which very likely may have no novelty in it.

In opposition to this very strong fact, may I suggest the possi-

bility that the change in the mode of life of the Esquimaux in their new country (to which they were probably forcibly driven), and a change in the manner of carrying the child in infancy, may have caused a material alteration in the form of the head, whilst other peculiarities of face and form remained nearly the same.

The Esquimaux infant is carried in the hood of the mother's coat, and its head is perfectly free, with no pressure on one part more than another.

The peculiar form of head of the Red Indian of America may in a greater or less degree be caused by the kind of cradle used. The baby is fastened in its cradle in such a manner that the whole weight of the little creature's head rests almost constantly on the back part or occiput: the effect would be to reduce the longitudinal and increase the lateral diameter of the skull.

Of course I do not allude to the intentional and artificial alteration of the form of the skull, as practised among the Chenooks.

The discovery of many reindeer and muskcatle by the Swedish (? German) expedition on the East Coast of Greenland, as mentioned by Mr. Howorth, where previously none had been seen, may be accounted for by these animals—after having been much hunted and harassed by the natives near Smith's Sound and Melville Bay, on the north-west extremity of Greenland—migrating to the east shore, where, finding food and rest, they remained unmolested to increase and multiply, which they do very rapidly under such conditions.

Deer, muskcatle, and hares were found in great numbers, and very tame and in good condition on the Parry Islands, in latitude 76°, and on Banks Land in latitude 74° N., by several of the recent Arctic expeditions, and these do not appear to have migrated southward in the autumn. I have no doubt that were those localities visited by a band of hunters, these animals would after a few years become shy and timid, and finally move off to a more safe position, either north or south, as their own instinct or the trending or nature of the country might lead them. This I have known to occur frequently in America farther to the south.

These sudden and unforeseen migrations (being an exception to the usually very regular habits of the animals) are among the chief causes of the suffering and deaths by starvation among the Esquimaux.

Although what I have written above has been the result of my own observation, it may have been spoken or written by some one else before, much better than I can pretend to do. If so this communication will find its way, as it deserves, to the wastebasket.

JOHN RAE

A, Scientific "Bone-Setter"

THE interesting article on "Bone-Setting" in NATURE for May 9 induces me to narrate my own experience. More than twenty years ago, in the city of New York, while swinging upon parallel bars in the gymnasium, I fell backwards, and to save my head threw out my left arm, thus catching the fall upon the palmer end of the radius, and, as it proved, fracturing the neck of the radius at the point of articulation with the ulna. I sent for one of the most eminent surgeons, then Professor and surgeon to a large hospital, but several hours elapsed before his arrival; and by that time the swelling and inflammation at the elbow had all the appearance of a sprain, and the fracture was not detected. Some days afterwards the surgeon discovered that there had been a fracture, and that a false adhesion had begun. This was broken up, and the arm set in splints, according to the approved method. After the usual time the bandages were removed, but the forearm was incapable of flexion, extension, or rotation. Every appliance was used to restore it to its normal condition, such as lifting, friction, sponging, &c., but without effect. The arm became useless, and began to shrivel. It was examined by the first surgeons of New York and other cities. Some thought that the radius had adhered to the ulna, others that there was a deposit of interosseous matter, but none could suggest a remedy.

Nine months after the accident I chanced to be in Philadelphia, and called upon Dr. Rhea Barton, who, though he had retired from practice, consented to look into my case. After careful examination, he said, "If you will consent to suffer the pain (it was before the use of chloroform) I will agree to restore the arm." He went on to say that pressure demonstrated a slight crepitation at the joint, and also a slight elasticity; and this assured him that the trouble was in the ligaments; that in consequence of the long imprisonment of the arm in splints, while under inflammation, a ligamentous adhesion had taken place, and the synovial fluid had been absorbed. He then applied

one hand firmly to the elbow and the other to the palmer extremity of the radius, and, diverting my attention by anecdote and wit, thus relaxing the resistance of the will to pain, he gave a sudden wrench, there was a sound like the ripping of cotton cloth, and the arm lay outstretched before me, quivering with pain, but capable of motion. Mechanical appliances for a few weeks so far completed the restoration that I have ever since had about four-fifths of its normal use and power.

Now, Dr. Barton did, upon scientific knowledge, what the "bone-setter" does empirically—"by manipulation, suddenly and forcibly tearing asunder the adhesions" formed between the ligaments and the bone; and he assured me that the whole difficulty would have been averted had the arm, when under treatment for fracture, been gently moved at times according to nature. I think he has published a monograph upon this point, but I cannot now refer to it.

JOSEPH P. THOMPSON

Berlin, May 22

Pathological Legends

MR. TYLOR speaks of vampires as illustrations of Savage Animism, and regards them as inventions to explain wasting disease. The records of such unseen agents point to two classes of vampires, one of which has nothing to do with wasting disease. To take two extreme cases: the story of Grettir's conflict with Glam the house churl, contrasts with the Vampire Cat of Nabeshimes, as told by Mitford in the "Tales of Old Japan." The Northern hero seeks the evil one and overpowers him, but his success is dearly bought, for evil temper and nervousness never leave him, and his after life is unlucky from these two causes. The Japanese Prince is visited nightly by the counterfeit of his lovely concubine, he pines away, and is only saved by the energy of a retainer, who slays the fair persecutor. Here are types of two kinds of malady; one is truly wasting, the other is of that kind which ends in apoplexy, epilepsy, acute mania, or if death is not speedy and sudden, dyspepsia may reduce the hero to Grettir's state without obviously impairing his strength. The Japanese story gives the common superstition among polygamous people with whom progressive exhaustion is not uncommon, as "Hawke's Voyages" quaintly explain. The Grettir Saga gives a pagan version of what figures more than once in Christian legends as saintly intervention. Thus, the Scandinavian invader blasphemers the English saint, who straightway appears to him, and points the finger; the blasphemer drops down dead. Glam, the churl, gorges himself with food, and goes to the hill, the next morning he is found crushed and distorted, and the horror of his punishment is proportioned to his crime, for he ate meat on a Church fast, and it was doubtless sweet to his neighbours to recall the fact that they heard his shrieks when sitting in church. Glam's successors perish violently, one of them being found convulsed and broken on Glam's cairn, just as in more places than one in Scotland men have been found in convulsions near places which superstition had made terrible on account of some great crime. But Grettir, for twenty years after his fight with Glam, leads a life of incessant fighting as an outlaw. He cannot go alone, his nerve is shaken, he sees things in the dark, and his temper is irritable. It is of course impossible to separate out the various forms of unseen agency to which men in rude times were subject. But the Vampires of the North and Incubi are members of the same family; the Vampires of Asia belong to another family. The former represent indigestion, the results of gross overeating and drinking, aggravated, doubtless, by the circumstances that the opportunities of excess were not frequent, and that semi-starvations occurred often between copious meals. The demons are mostly men; in all cases they give rise to violent conflicts, in which, if a man dies, his distorted convulsed body suggests the presence of a corporeal enemy, a reasonable enough notion among those to whom natural death meant, in the case of a strong man, death by the sword. The latter represents the results of lechery in some form or other; there is no tale of conflict, though now and then sudden death is accompanied by convulsions such as, we know, frequently terminate cases of general paralysis and *Tuberculous dorsalis*. The correspondence between the Northern Berserker and the furious Malay who runs amuck, is interesting in reference to this contrast. The insanity of the Berserker is that of an individual; the persecution of the Northern vampire falls on the whole family of the sufferer; and, while it is difficult under ordinary circumstances for any large number of people to become simultaneously affected by genuine