had recently intended to have published some articles which I had prepared on the connection of the Pleiades with primitive ideas as to Paradise, but it seemed prudent to defer doing so, and to bring out the whole subject in one volume. To show, however, how widely spread these traditions as to the Pleiades are, I may attempt to give the information which Dr. Tylor invites, as to the myth of the lost Pleiad being a heritage among savages. Those stars are only apparently six, yet all the world over, among civilised and savage races, in Europe, in India, China, Japan, America, and Africa, this diminutive star group is not merely regarded as seven stars, but what is still more surprising, as "*The Seven Stars*," though the far brighter seven stars of the Great Bear might seem to deserve the title.

There are various myths to account for the missing Pleiad, but one I think will suffice to show that the Australians did not borrow the idea from Europeans.

I once asked a native of the Gold Coast, a negro Hercules in strength, who had therefore been christened (probably by some pious naval officer) *Fivehorsepower*, whether he knew anything of the stars. "No!" he replied, "I know nuffin about de stars." "But don't you know anything of 'the seven stars'?" "Oh yes, of course," he answered; "every nigger knows de seben stars." "Why do you call them seven?" I asked him; "can you count seven stars?" "No," he replied, "you count one, two, three, four, five, six; then toddler one hide herself, no let you count her." There is also a savage tradition, which I can recollect, that the Pleiades are young women, six of whom are very beautiful, but the seventh is so plain that she conceals herself from sight.

Some tribes of the Australians dance in honour of the Pleiades, because "they are very good to the black fellows." Was this borrowed through Europeans from "the sweet influences of the Pleiades" which Job celebrates?

Ask a negro in the Southern States to look through a telescope, and he will invariably turn it towards the Pleiades, "for they are berry good to the darkies." The natives of America, both North and South, regard the Pleiades as beneficent stars, and dance in their honour. "Oh what do we owe to thee!" is the grateful salutation of one tribe. Whence then did this arise? It was not merely because those stars announced spring, and were "stars of rain," or because they were "for signs, and for seasons, and days, and years," but also because they were connected with the idea of Paradise and the abode of the Deity. The problematical theory of Moedler, that Alcyone, the brightest of the Pleiades, is the central sun of the universe, is most interesting on account of the singular fact that such was actually the belief of early ages. I have within the past year found unexpected, and I think conclusive, proofs that the name *Alcyone* (or rather, *Alkyone*), meaning a centre, pivot, or turning-point, was not given without some reason to that star, for the ancients in very remote ages undoubtedly believed that it was the centre of the universe, and that Paradise, the primal home of our race and the abode of the Deity and of the spirits of the dead, was in the Pleiades, traces of which ideas we even find among savages.

The *Alkyonic Lake*, the waters of which led to the world of spirits, must have meant simply "the waters of death" leading to Alkyone or Paradise, and reminds us of Ulysses' voyage to the abodes of the dead and to the Gardens of Alkynōs.

With the Pleiades, too, sacred birds (birds of paradise) were connected. In my journal of researches (1863) I expressed my conviction that *Manu* (a word meaning, in the Indian Archipelago, a fowl or bird) would be found to have been connected with the Pleiades. I have been recently gratified at finding that in far-distant Samoa there is a sacred bird called, not *Manu-ali*, the royal bird, as some European writers have assumed, but *Manu-lili*, the bird of the Pleiades.

What a singular link we have here between the folk-lore of these savages and that of the Old World, for to this very day, from Britain to Japan, the Pleiades are popularly known as "the hen" or "hen and her chickens."

In Mexico the beautiful kingfisher was a sacred bird. May not the name of the same bird in Greece have been a survival of similar ideas, as it was called the *Halcyon*, i.e. belonging to Alcyone, or a bird of paradise?

The bright sunny days, too, at the end of autumn, that shining season of the Pleiades, called in America the Indian summer, were *Halcyon* days among the Greeks, which we should now render heavenly days.

Even if the theory of prehistoric astronomers and of some

modern men of science, that the Pleiades are the centre of the universe, should prove to have been unfounded, I am persuaded that the day is coming when the learned will admit that those stars are the "central sun" of the religions, calendars, myths, traditions, and symbolism of early ages—an era, however, so marvellously remote, that investigations respecting it bear the same relation to the study of anthropology and to the science of religion that palæontology does to natural history.

I shall be greatly disappointed if I cannot satisfy even so cautious and careful an observer as Dr. Tylor, that there is a mass of original and primitive traditions as to the Pleiades among isolated savages in various quarters of the globe.

In the meantime, until these conclusions are submitted in a proper and scientific shape to the learned, Dr. Tylor is perfectly justified in adopting the prudent legal maxim, *De non apparentibus et non existentibus eadem est ratio*.

I may however invite his attention to Mr. Ernest de Bunsen's recent work on the Pleiades—"The Pleiades and the Zodiac," published in German (Berlin, 1879), and his recent learned work, the "Angel Messiah." The former he has kindly dedicated to me as the pioneer in this new and difficult field of research.

R. G. HALIBURTON

The Pronunciation of Deaf-mutes who have been Taught to Articulate

IN NATURE (vol. xxv. p. 72) it is reported that at the last meeting of the French Academy M. Hébert made some observations to show that deaf-mutes who have been taught to articulate speak with the accent of their native district. This curious circumstance, which was contested by M. Blanchard, has already been recorded. One case is given in an old number of the *Philosophical Transactions*, No. 312. About the age of seventeen a young man, a congenital deaf-mute, was twice attacked by fever. "Some weeks after recovery he perceived a motion of some kind in his brain, which was very uneasy to him, and afterwards he began to hear, and, in process of time, to understand speech. This naturally disposed him to imitate what he heard, and to attempt to speak. The servants were much annoyed to hear him. He was not distinctly understood, however, for some weeks; but is now understood tolerably well. But what is singular is that he retains the Highland accent, just as Highlanders do who are advanced to his age before they begin to learn the English tongue. He cannot speak any Erse or Irish, for it was in the Lowlands he first heard and spoke." The curious circumstance of his possession of the Highland accent is confirmed by the testimony of similar phenomena in the deaf and dumb schools of Spain. "One fact," says Ticknor, "I witnessed, and knew therefore personally, which is extremely curious. Not one of the pupils, of course, can ever have heard a human sound, and all their knowledge and practice in speaking must come from their imitation of the visible mechanical movement of the lips and other organs of enunciation by their teachers, who were all Castilians, yet each speaks clearly and decidedly, and with the accent of the province from which he comes, so that I could instantly distinguish the Catalonians and Biscayans and Castilians, whilst others, more practised in Spanish, felt the Malagan and Andalusian tones" ("Life and Journals of George of Ticknor," vol. i. p. 196, London, 1876). A similar case has been mentioned to me by Mr. J. J. Alley of Manchester. E. R. became deaf and dumb at a very early age, and did not talk until he was about seventeen, when he was taught articulation by Mr. Alley. He speaks with the accent of his native county of Stafford. These facts are cited in my paper on "The Education of the Deaf and Dumb," in the "Companion to the Almanac" for 1880.

WILLIAM E. A. AXON

Tanganyika Shells

IN the *Proc. Zool. Soc. Lond.* for May, 1881, pp. 558-561 Mr. Edgar A. Smith has described two new species of shell from Lake Tanganyika, Africa, for which he has proposed the new generic name of *Paramania*. These forms are, without doubt, generically identical with the *Pyrgulifera humerosa* of Meek (see U.S. Geol. Sur. 40th Parallel, by Clarence King, vol. iv. p. 176, pl. xvii, Figs. 19 and 19a), which antedates Mr. Smith's name by at least five years. Mr. Meek's species has hitherto been the only known member of the genus, either fossil or recent, and was only known to occur in the strata of the

Laramie group, an extensive brackish water formation in Western North America, which holds a transitional position between the Mesozoic and Cenozoic series. Associated with *Pyrgulifera humerosa*, among various other fresh and brackish-water forms, is one that I have described under the name of *Goniobasis cleburni*, which is evidently congeneric with the *Melania* (*Sermyla*) *admirabilis* of Smith, an associate of *Pyrgulifera damoni* and *P. crassigranulata* in Lake Tanganyika. As that lake has evidently once been a brackish water sea, it is not strange that there should be certain similarities between its molluscan fauna and the fauna of similar bodies of water that existed in Mesozoic and Cenozoic time. It is, however, remarkable that the two generic types here especially referred to should appear in their integrity living in Africa, and not in North America, where the fossil forms occur; and especially so because so many of the fresh-water and land-molluscan types now living on the latter continent are found fossil in its Mesozoic and Cenozoic strata.

C. A. WHITE

Washington, D.C., November 4

Velocity of Wind

THE following observations regarding the velocity of the wind in the south-west gale of the 21st and 22nd of November at Edinburgh may be of interest. The observations were made by me about nine o'clock on the morning of the 22nd, when the wind had somewhat moderated:—

	Miles per hour.
Mean velocity	62·3
Velocity during a squall	71·6

These observations are calculated from the velocity of clouds of smoke issuing from the chimney of the Caledonian Distillery, and travelling for a distance of 2100 feet, and are thus free from instrumental errors. The chimney is 225 feet high, and its base is about 200 feet above the sea-level.

CHARLES ALEX. STEVENSON

Arctic Research

No one can hold in higher honour and respect than I do the opinions of the greatest of Arctic navigators, Sir Edward Parry, although these opinions were expressed more than half a century ago, since when our knowledge of Arctic shores has very materially increased.

My letter in NATURE vol. xxv. p. 53, where alluding to navigable waters through channels, &c., in the Arctic Sea, specially referred to Arctic America and the lands lying north of it, in which category Greenland can scarcely be included, certainly not that part of its western shores along which a navigable passage is almost invariably to be found.

The following passages from the extract from "Sir Edward Parry's writings" (NATURE, vol. xxv. p. 78) are those which specially bear upon the statements made by me:—

"We experienced a striking example of this kind [ice obstruction] in coasting the eastern shore of Melville Peninsula in 1822 and 1823, the whole of the coast being so loaded with ice as to make the navigation extremely difficult and dangerous."

I do not in the least doubt this, but difficulties of ice-navigation are comparative, and I believe from Eskimo report that the opposite side of Fox's Channel would have been worse. On asking the natives of Repulse Bay why they did not go over to Southampton Island, which forms the eastern shore (having a western aspect) of Sir Thomas Roe's Welcome, the reply was, there were no seals or walruses there, the ice being too much on shore. The same is said of the east side of Fox's Channel.

The sea on the west side of Melville Peninsula is said never to be free from ice¹; such was its condition during the summer of 1846; and in 1847, when I traced its whole shore, there was a fringe of heavy and rugged hummocks some miles wide all the way.

In the springs of 1847 and 1854 the opposite coast, being the west side of Committee Bay—having an eastern aspect—bore evidence, by the small quantity of rough ice met with, that there had been navigable water at some time during the previous summer.

There can, as a rule, be no better or truer guide to the side of a channel, inlet, &c., which is least ice-obstructed than the assembling of marine animals, seals, walruses, and whales (provided always that these animals have not been driven away by constant attacks to less favoured resorts) along its shores, on which the Eskimos have their chief camping-grounds, and of

which there are many along the east shore of Melville Peninsula and southward on the same coast-line to lat. 64°, near which the Americans have had their chief whaling and sealing stations for many years.¹

On August 19 and 20, 1859, Sir Leopold McClintock ran 150 miles down Prince Regent's Inlet, along the side, having an eastern aspect, to Bellot Strait, without seeing a bit of ice except one large iceberg, and returned by the same route in 1860 (August 10 to 16), but on this occasion was stopped near Fury Point by ice, forced in by a strong easterly breeze of four days' duration; when the wind changed to west the obstruction was speedily removed, and there was no further difficulty. Dundee whalers have not infrequently visited Cresswell Bay in this locality, and killed whales there. So much for shores having an eastern aspect being navigable, notably that of Smith Sound.

The second passage from "Parry's Writings" I wish to comment upon is—

"These facts, when taken together, have long impressed me with the idea that there must exist in the Polar regions some general motion of the sea towards the west, causing the ice to set in that direction, when not impelled by contrary winds or local or occasional currents."

When it can be proved that permanent currents exist in the sea, irrespective of wind influence, we must naturally assume that the motion of the sea and of the ice floating on it is in the same direction.

The *Resolute*, one of Sir Edward Belcher's ships, abandoned near the south entrance of Wellington Channel in 1854, must have driven eastward for 300 miles through Barrow Strait and Lancaster Sound, into Baffin's Bay, and was picked up far to the south by the Americans some years afterwards.

Sir Leopold McClintock in 1859 and 1860 found Bellot Strait free from ice, and quite navigable, entering from the east, but impenetrably blocked with thick old ice-floes at its western extremity. In his chart is a note: "Bellot Strait, flood and permanent current to eastward."

Sir Edward Parry experienced a somewhat similar permanent easterly current in the Strait of the Fury and Hecla, as the following extract from Capt. Lyon's (who commanded one of Parry's ships) journal (p. 275) will show: "That there was a prevailing set from the westward we had long known, even before entering the strait, and we saw by the driving of the loose ice against an easterly wind that it ran with great force. As an extraordinary instance in point, the *Hecla* broke adrift on the 13th in consequence of a piece of ice parting, and was carried (eastward) against a fresh easterly breeze, about a mile from the fast floe. All sail being set before the wind, we were nearly two hours in recovering this one mile, though to all appearance and by the log going between three and four knots through the water."

Here are examples of two permanent currents running to the east, through straits narrow, it is true, but the only passages known to exist in two lands extending about six degrees, or 360 miles north and south.

The conclusion to be arrived at seems to be, that the sea to the west of these lands is at a higher level than it is to the east of them, and consequently if the general motion of the "sea is towards the west," according to Sir Edward Parry's idea, it must, in the localities named, be moving in opposition to its own currents, or up hill.

J. RAE

4, Addison Gardens, November 26

ARE not the facts of ice-accumulations at "the western sides of seas or inlets," mentioned in your last number (p. 78), to be explained by reference to Baer's law for the flow of rivers? This law, corroborated by many observers in all parts of the world (see for instance NATURE, vol. xv. p. 207), states, as a simple consequence of the earth's rotation, the deviation to the right bank of all rivers of the northern hemisphere running north and south, i.e. to the west, if the flow is from the north, and to the east if from the south. Considered from this point of view, it may suffice that the masses of ice are borne by currents from the north, to account for the accumulations on the western borders of these currents, i.e. on "the eastern coast of any portion of land." I am well aware that the principle in question was applied to the theory of ocean-currents, long ere C. E.

¹ Along this shore, seal, walrus, and the right whale abounded in 1846, 1847, and 1853, when I was there. In 1854 constant easterly winds kept the ice close to the land for ten days, so that few marine animals were seen during that time.

¹ See Rae's "Arctic Expedition," 1846-7, p. 49.