America, the East and West Indies, the Sandwich Islands, and some parts of the united seas. His diligent and learned researches soon gave him a place as an authority among conchologists, — an authority now everywhere recognized. His correspondents were very numerous, residing in all parts of the world. Mr. Garrett's private collection of shells (now on sale) consists of over eight thousand species, comprising over thirty thousand examples, and representing almost every known part of the globe. Of this large collection, Mr. Garrett has himself collected some four thousand species. The deceased was a corresponding member of the California Academy of Sciences and of the Philadelphia Academy of Natural Sciences. The following is a list of Mr. Garrett's principal writings: in Proceedings of Zoölogical Society, London, list of *Mitridæ* collected at Rarotonga, Cook's Isles; descriptions of two new species of *Separatista*, of two new species of *Cæcum*, of a new species of *Scissurella*; 'On the Terrestrial *Mollusca* of the Viti Islands:' in the *Quarterly Journal of Conchology*, Leeds, England, 'Occurrence of *Crepidula aculeata* at the Marquesan Islands;' 'Occurrence of *Gadinia reticulata* in Eastern Polynesia;' 'Annotated Catalogue of the Species of *Conus* collected in the South Sea Islands;' 'Catalogue of the Polynesian *Mitridæ*, with Remarks on their Geographical Distribution, Station, and Description of Supposed New Species;' 'Annotated Catalogue of the *Cypraoidea* collected in the South Sea Islands:' in the *Bulletin of the Société Malacologique de France* (Paris), 'On the Terrestrial *Mollusca* of the Marquesan Islands:' in the *American Journal of Conchology*, vol. vii., 'Descriptions of New Species of Land and Fresh-Water Shells from the South Sea Islands' (plates); 'List of *Viti Bulimus* and Descriptions of new Species' (plates): in the Proceedings of the California Academy of Natural Sciences, 'Descriptions of New Species of Shells inhabiting the Sandwich Islands;' 'Descriptions of New Species of Fishes inhabiting the Sandwich Islands;' 'Description of New Species of South Sea Shells:' in Proceedings of the Academy of Natural Sciences, Philadelphia, 'On the Terrestrial *Mollusca* inhabiting Cook's Islands, Society Islands, and Samoan Group;' 'List of Land-Shells inhabiting Raraturu (one of the Austral Islands), with Remarks on their Synonymes and Geographical Range;' and several other papers."

— In seven months of the year which closed Dec. 31 the Metropolitan Ayslums Board authorities of London had dealt with no fewer than 5,166 scarlet-fever patients; for 203 cases were admitted in June, 359 in July, 521 in August, 1,041 in September, 1,287 in October, 982 in November, and 773 in December. The board had at one time as many as 2,780 fever patients under treatment at one time, and, as a result of the general public utilizing to a greater extent than had ever been previously recorded the accommodation provided at the public expense, seven large hospitals had to be opened, and additional hut-accommodation provided. Fortunately the disease was not of a severe character, and the death-rate was not heavy. The admissions in September and October ranged as high as 50 and 60 per diem, but the disease has since sensibly declined. There were on the last day of 1887, 2,224 patients under treatment, suffering from fever of all kinds, but many of these patients are rapidly regaining health. One feature of the epidemic was the opening of the magnificent hospital for convalescing patients at Winchmore-hill, and another was the ready answer given to an appeal made by Miss Baker in the columns of *The London Times* for toys for the children. During 1887 London has, for the first time for many years, enjoyed an immunity from any serious amount of small-pox; for, although individual cases have occurred, very beneficial results have accrued from prompt removals and isolation of the disease.

— The *Publishers' Circular*, London, Eng., states that the total number of new books and new editions published in 1887 is not far from 500 in excess of the books of the previous year. Theology shows an increase of 60 or 70 on the last return. There are more than 100 educational works over the product of 1886, while in juvenile works the increase is less marked. Novels keep up their average of more than two per diem, Sundays included. Politico-economical books are less in number than usual, which is also the case in the department of arts and sciences, which includes illustrated volumes. In voyages, exploration, and books descriptive of countries, we find about 50 new books recorded more than for 1886, while in history and biography there is a notable rise in the issue of new works, — over 100. Poetry and the drama are about equally represented with last year. In medicine and surgery, in belle-lettres and essays, as also in miscellaneous publications, a slight increase of production is shown.

— Mrs. Ayrton, the wife of the professor at the Technical School at Kensington, England, is going to give a course of experimental lectures on the practical uses of electricity to ladies. Mrs. Ayrton was educated at Girton College.

— The general meeting of the Association for the Improvement of Geometrical Teaching, London, was held Jan. 14. The following papers were read: 'The Recent Geometry of the Triangle,' by Mr. R. F. Davis; 'On the Multiplication and Division of Concrete Quantities,' by Prof. A. Lodge; and 'On some Principles of Arithmetic,' by Mr. W. G. Bell.

— A sufficient sum has been collected for the erection of a monument at Köping, in Sweden, in memory of the celebrated chemist and apothecary, Charles William Scheele, who was born, 1742, at Stralsund, and died, 1786, at the above-named town.

— The Argentine Information Office has just published an excellent map of the Argentine Republic, on the back of which is given a short description of the country and the latest information as to its political organization, agriculture, industries, commerce, revenue, and expenditure, railways, and various other subjects of interest.

— The Government of Batavia has given notice to the admiralty that the commander of His Netherlands Majesty's ship 'Samarang' reports the existence of a low, wooded island, hitherto uncharted, lying westward of Selaru, Timor Laut Islands. The island is reported to be about two miles long in a north-north-easterly and south-south-westerly direction, and about two-thirds of a mile broad; position as given, centre of island (approximate), latitude 8° 15′ south, longitude 130° 39′ east.

— A communication from the Government of Queensland to the admiralty states that the natives of Stephen Island, on the eastern side of Great North-East Channel, Torres Strait, who were formerly very ferocious and hostile, are now thoroughly quiet: they are supplied by the Government of Queensland with a boat, and are prepared to render assistance to any passing vessel requiring their services that will hoist a flag at the mast-head. Yams, sweet-potatoes, and cocoanuts can be obtained from these natives. There is good anchorage with south-easterly winds off the north-western end of the reef surrounding Stephen's Islands. At Murray Islands a mission station is established, where shipwrecked crews will be kindly treated, and taken to Thursday Island. At Darnley Island complete confidence can now be placed in the natives.

— In *Science* of Dec. 30, 1887, p. 323, second column, 23d line from bottom, the first 'south-west' should read 'south-east.'

LETTERS TO THE EDITOR.

*** Correspondents are requested to be as brief as possible. The writer's name is in all cases required as proof of good faith.*

Twenty copies of the number containing his communication will be furnished free to any correspondent on request.

The editor will be glad to publish any queries consonant with the character of the journal.

The Snow-Snake.

THE writer of an interesting article on Pocahontas, in a recent popular periodical, had evidently been reading up Morgan's works rather than early Virginia writers. The "hunting lodges, built up of mats, which they remove as they please," become "long, low houses of bark, . . . twenty families to a house." The "great fire made in a long house" becomes five, "each fire being shared by four families." The one seat at the end of Powhatan's house expands into stalls and bunks all around; and while it is said that "no one, in any household, was better off or of higher rank than his brothers or sisters," yet Powhatan is described as having "such an influence over his tribesmen that he was regarded as the head

man (president, we might say) of this forest republic, which comprised the thirty confederated tribes of Powhatan." These questions need not be discussed now, but such statements ought not to be made history.

My attention was directed to the article by a friend, who was surprised by a mention of the snow-snake among these primitive Virginians. The children indoors were playing at *gus-ha-eh* (or 'peach-pits'), it is said; but where the peaches came from at that early day is not explained. The "boys were tumbling about in the light snow, at their favorite game of *ga-wa-sa* (or the 'snow-snake')." The use of these Seneca words sufficiently shows the source of information, but it is not wise to place a Northern game so far South. Something more than a light snow is required for this sport; and boys do not tumble about in it, but stand up to their work. Neither would any one risk breaking the graceful shaft between the legs of one running at full speed.

I was recently surprised at not finding the snow-snake in the collection of Iroquois implements at the Museum of Natural History in New York, and still more to learn how few students of Indian life know any thing of it. A game something like it is found among some Western Indians, but the implement used is very different. Nor do I now recall any mention of it among early Indian games. That it would not be of general use is in the nature of things. Only in those colder regions where an icy crust often forms would it naturally occur. Even there it may be recent, as the head is always weighted with metal, melted into grooves, and nicely smoothed. Of course, this might have been different if its use was ancient. Morgan describes the Seneca snow-snake as being from five to seven feet long, and he gives a good figure and description. Those of the Onondagas are often longer. Mine is of their medium

size, and is upwards of seven feet long, while I have seen many not less than nine feet in length. They are very neatly made, for any irregularity would interfere with successful use. The smaller notched end of mine is but a trifle over half an inch wide by about a quarter deep. This increases to seven-eighths of an inch wide by one-half deep just back of the raised head at the other end. The head begins to rise about six inches from the extreme point with a gradual curve. Lead is inlaid in this, often in a pretty pattern; and I have thought it barely possible, granting its antiquity, that stone bird amulets may once have formed the heads. These seem to belong to woodland regions, where the winters are long, but such a use is hardly probable.

The game is simply one of dexterity and strength. The forefinger is placed in the basal notch, the thumb and remaining fingers reaching along the shaft, and the snow-snake is thrown forward on the ice or hard snow. It might go a little way through light snow, but this is not favorable to its use. An icy crust or the track of a sleigh, the travelled road, or even ice, are favorite resorts. A much worn road would injure the fine polish of the implement, and a level surface, with a good crust, is commonly chosen. On a fine winter's day men and boys are often seen in such places, pursuing this sport. They play quietly, for the Onondagas are a very quiet people, and one out of sight might know nothing of the most exciting game. When the slender shaft is thrown, it glides rapidly over the surface, with upraised head and a quivering motion, that gives it a strange resemblance to a living creature. The Christian Onondagas have abandoned its use, perhaps because betting is a feature of the game, or it may be they dislike its symbolism; but I think the former the true reason. The Senecas call it *ga-wa-sa;* the Onondagas, *ka-wher-tah;* neither of these words referring to its snaky appearance. I am unable to learn of any idea attached to the name, and this favors an early use. The game is to see which person or side can throw it farthest, and sometimes the distance of a quarter of a mile is reached under favorable circumstances, but I think this rare. W. M. BEAUCHAMP.

Baldwinsville, N.Y., Dec. 30.

The Conspiracy of Silence.

THE Duke of Argyll's charge of a conspiracy of silence among scientific men, by means of which new truths are to be ignored, has been perhaps sufficiently answered. In fact, according to the duke's own statement, the theories of Messrs. Murray and Guppy are already printed, and are before the public for judgment. This discussion has been interesting, but, so far as I have seen, two points worthy of attention have not been brought out.

1. There is in all branches of learning a just and good conservatism. We cannot afford to give up scientific truths that have been acquired with much labor and difficulty. Hence, when theories are proposed that conflict with established principles, they are to be received with caution. No one can believe in perpetual motion until our theory of dynamics is overthrown. A mathematician who claims to solve the equation of the fifth degree will have a hard time in finding believers. If a writer on theoretical astronomy violates the rules of the calculus, he has no right to ask the respect of astronomers. He deserves to be ignored. Astronomers should not spend their time in demolishing absurd theories that may be proposed to them. The age of Don Quixote is past.

2. But in the discussion which has taken place the assumption seems to be made that scientific men are better, or ought to be better, than other people. Although this might be taken as a tacit compliment, I think it is a mistake. The truth is, that scientific men are very much like other people. They have the same desires, the same passions; and they will have the same greed for money and fame that other people have. If they place themselves on a footing devoid of morals, they will develop as mean men as the world has ever seen. But it is not simply from the character of the men who do scientific work that we are to look for good results. These come rather from the scientific method, which, in its final judgment, pays no regard to the condition of the worker. The question is only if his result is right. The dissipated young Frenchman, Galois, was killed in a duel at the age of twenty-one, but his genius was so powerful that he left an indelible mark on the old science of mathematics. His work remains, and in using it we do not consider Galois and his extreme republican principles. ASAPH HALL.

Washington, D.C., Jan. 10.

One of the Causes of the Inefficiency of the Reis Telephone.

SOME who have experimented with the Reis telephone declare that they have never been able to hear a transmitted word. Others have heard some words and sentences; but these have always been weak and irregular, so as generally to discourage one in a short time, especially now, when through the improvements in telephones it is possible to reproduce words both loudly and regularly. Experimenters therefore have been impatient with Reis's apparatus, and seldom have done any thing with it, except make some hasty tests for some phase of the great telephone controversy.

The inefficiency of the Reis telephone has, by a kind of common consent, been admitted to be altogether due to the imperfect mechanical operation of the transmitter, by which the making and breaking of the current when it is in operation is such as not to properly follow the actual vibratory movements of the diaphragm when the latter is moved by speech-vibrations; that at best it can deliver to the line only the fundamental rate of the vibration, leaving out the characteristic over-tones which are supposed to be necessary to the successful transmission of speech. This judgment as to the mode of operation of the transmitter has been derived wholly from what has been heard by one listening at the receiver; for there is to-day no known method by which it may be determined whether or not a transmitter has the proper motions, except by listening at the receiver. That is the test. Hence it has been concluded, that, if speech was not properly delivered in a receiver, the trouble must be with the lack of proper movements of the transmitter. Yet it is mechanically possible for the transmitter to move properly, and the receiver to be so much overloaded, so to speak, that the latter fails to be heard on account of the extra disturbance.

The Page effect — the magnetic click — may be so strong in a Reis receiver, with a proper current, as to be heard a good many feet distant from it. When the receiver is held against the ear, the sound may be very loud; so much so as to quite drown weaker