

Correspondence.

Curious Course of a Bolt of Lightning.

To the Editor of the SCIENTIFIC AMERICAN:

Some of your readers may be interested in the following experience, which occurred during a severe thunderstorm, which seemed to charge the entire atmosphere in our vicinity with electricity. The instance in question is another refutation of the saying that lightning never strikes twice in the same place, as the house in which I was at the time, was damaged by two separate bolts striking scarcely two minutes apart. One entered at the southwest corner of the building through a tower, and the other at the northeast corner. Both flashes set the house on fire, the first conflagration bursting out at the southwest corner, but it was so shut in that the fire was not discovered until after the fire company had arrived, and had started to extinguish the fire at the second point. The bolt which struck the dome of the tower passed along a large nail through a studding in my room, incidentally melting the head off the nail; it passed between the frame of a mirror and the frame that secured the latter to the dresser, and flashed toward my head, passing close enough to blind but not shock me, then completed the circuit and returned to the mirror, smashing the southeast corner of the latter, and then it passed out of the room within two feet of where it had entered, again running along a nail through the studding. The bolt burnt the glass at the top of the mirror and melted some of the quicksilver, leaving a "powder burn." The question which has puzzled me is why the bolt did not run down the mirror, as the quicksilver presented a conductor? Furthermore, what caused the bolt to form a circuit and return to a point near the place at which it entered the room?

N. HARVEY ROGERS.

Sedalia, Mo., August 8, 1906.

Uniformity of the Fleet Individuals.

To the Editor of the SCIENTIFIC AMERICAN:

In connection with the review of the North Atlantic fleet, it should be interesting to note the degree of uniformity of the United States squadrons.

The American public as a whole views everything pertaining to naval matters in a favorable light. Strict criticism, as in other navies, is hardly ever heard, and journalism does its best to encourage praise toward any party undertaking. How powerful the battleship squadrons are is commented upon by all newspapers, but how efficient they might be is never looked after. I therefore think it my duty to unveil certain facts about United States squadrons.

Everybody knows that a squadron's speed is determined by its slowest vessel. Did it ever occur to anybody that our first squadron in the review, consisting of our most modern battleships, has a speed of 16 knots? But the fact stands that the "Kearsarge" and "Kentucky," which are members of the said squadron, have only a four-hour-trial-trip speed of 16 knots.

To class the "Maine" and "Missouri" with 18 knots speed, the "Louisiana" with 18½ knots, and three ships of the "Virginia" class with 19 knots, together with the two "Kentuckys" (16 knots) does not show any marked sign of ingenuity. The same may be said of the third division, second squadron. There the "Indiana," with 15 knots (this is her actual speed now), the "Iowa" with 16 knots, and the two "Alabamas" with 16½ knots, form a squadron. The climax, however, is reached in the sixth division and in the Asiatic battleship squadron. In the former three 16-knot "Chattanooga" and the 23-knot "Minneapolis" go together, while in the latter we have the 15-knot "Oregon," the 17½-knot "Wisconsin," and the 18-knot "Ohio." Fortunately, a reorganization of fleets will take place in the spring. As a suggestion to that effect, I propose the following alterations:

First battleship squadron: Three "Maines," five "Connecticuts," speed 18 knots.

Second battleship squadron: Five "Virginias," speed 19 knots.

Reserve: Three "Oregons," speed 15 knots. One "Texas."

Pacific battleship squadron: Three "Alabamas," one "Iowa," two "Kentuckys," speed 16½ knots.

In this plan it will immediately be seen that except in the reserve, the maximum speed of each squadron as a whole corresponds with the maximum speed of each individual ship.

H. LEHMANN.

New York, September 3, 1906.

"Wanted: Brains to Dissect."

To the Editor of the SCIENTIFIC AMERICAN:

The recent article of Mr. Stirrup's in the SCIENTIFIC AMERICAN, on "Wanted: Brains to Dissect," is an indication that scientific men in America are giving some thought to the anatomy and physiology of the central nervous system. The one man in America who has made some original investigations concerning the brains of eminent men is Dr. Edward Anthony Spitzka, of New York city; and the theory advocated by this

fearless and painstaking investigator is calculated to upset all of our fetich devotion to the older theory, viz., that the intelligence of the individual, race, or nation, is dependent upon, and related to, "the enormous bed of gray matter." While science advocates that the "gray matter" is closely associated with the intelligence of the individual, Spitzka, of New York, has shown that the corpus callosum, the great bundle of transverse nerve fibers which connect the two hemispheres of the brain together, more than the gray matter itself, has to do with the degree of intelligence of the individual or the race. In the brain of the late Dr. Leidy, the anatomist, Spitzka has shown there was an enormous development of the corpus callosum. On the other hand, where the corpus callosum is smaller than normal, and not highly developed, that individual's intelligence is proportionally less. It is known that the frontal lobes of the brain are concerned in the higher intellectuality of man; while the Rolandic area, the posterior portion of the superior, middle, and inferior frontal convolutions, and the anterior portions of the superior, middle, and inferior convolutions of the parietal lobes, have nothing to do with the execution of the acts of the higher intellectual faculties, but that this great area is concerned in executing the muscular movements of the mouth, jaws, hands, arms, and lower extremities of the opposite side of the body. The cuneus, the little wedge-shaped area of the occipital lobe, is concerned in vision, and if a lesion occurs in the cuneus, hemianopsia occurs. While the right angular gyrus is concerned in the storing up of the names of objects seen, the angular gyrus of the opposite hemisphere, in right-handed persons, is concerned in storing up the color, shape, and forms of objects of the image, of the name of the object "seen" by the right angular gyrus. Thus the right angular gyrus is connected with the left angular gyrus by bundles of "associate fibers," and the cuneus, the temporal convolutions, the Rolandic, or great motor area of the brain and the frontal lobes, with their convolutions, are connected with the corresponding areas of the brain on the opposite side by bundles of associate brain fibers; all of which pass from one side of the brain to the other through the transverse bundle of fibers, which compose the corpus callosum, and it is upon the relative degree of development of these great transverse fibers, which are associative in function, depends the relative degree of intelligence of the race or individual, and not upon the number of grammes or ounces of the entire brain. Because the weight of the brain of the Arctic Esquimau exceeds the weight of the brain of the average American Anglo-Saxon, while "men of encyclopedic minds have large and heavy brains," it is not a scientific warrant that all large-brained individuals are intelligent. Because the brain of the American negro weighs somewhat less than the brain of the Arctic Esquimau, yet the intelligence of such individuals as the late Mr. Douglass or Booker T. Washington exceeds that of our hypoborean neighbors. The school of anatomists who follow Spitzka have inaugurated a new era in brain anatomy by calling attention to the important function of the great bundle of transverse fibers—the corpus callosum—as an index to the intelligence of a race or individual. "Wanted: Brains to Dissect." JAMES M. BODDY.

Troy, N. Y., August 28, 1906.

Henry or Hendrick Hudson?

To the Editor of the SCIENTIFIC AMERICAN:

As a reader of your always interesting paper, will you kindly permit me to trench on your good nature in respect to the article "Hendrick Hudson Memorial Bridge," in so far as it deals with the personality of Hudson himself?

The statement is made in this article that Hudson signalized his appreciation of the royal welcome by the Dutch by changing his name of Henry to Hendrick, and that this according to the best authorities is the name under which he sailed.

Will you permit me to point out that the contract under which Hudson sailed, drawn up by the Amsterdam company and signed by the Amsterdam directors, plainly gives the name as Henry and not Hendrick Hudson.

The person with whom Hudson conducted the negotiations was the Dutch consul at London, Van Materen, who knew Hudson personally, and through whom on his return and detention in England Hudson forwarded the report of his voyage to the Amsterdam directors. In his supplement to his History of King Philip II. (1611), two years after Hudson's return, he distinctly states that Hudson did not know a word of Dutch, and that he had been compelled to have certain documents relating to the voyage translated for him, and he refers to him not as Hendrick Hudson, but as "Een Kloeck Engheles Pilot Herry Hutson" (the experienced English pilot Henry Hudson).

Evidently Van Materen knew nothing of his change of name or nationality. Hudson's whole connection with the Dutch occupied one voyage and lasted less than seven months. He never returned to Amsterdam, but was detained on landing at England on his return, and

ordered by King James to return into the service of the Muscovy company. Evidently the King considered him an English subject, and as Hudson obeyed, Hudson considered himself an English subject and not a naturalized Dutchman, which is conclusive proof enough of his nationality and also of the appreciation in which his services were held. His voyages thereafter were all made in the service of the Muscovy company.

As for the statement made that his employment by the Dutch East India Company was for lack of encouragement in his own country, the following transcript from the report of President Jeannim to King Henry IV. of France shows conclusively that it was the Dutch East India Company that was seeking Hudson, and not Hudson the Dutch East India Company:

"He (LeMaire) sent me his brother to inform me that an English pilot had been called to Amsterdam by the East India Company to tell them what he had found. . . . (They had, however, been unwilling to undertake at once said expedition, and they had fully remunerated the Englishman, and had dismissed him with the promise of employment in the next year, 1610). . . . Because the East India Company fears above everything to be frustrated in this design. Isaac LeMaire would not converse with the Englishman except in secret. . . . This letter having been terminated, LeMaire writes me that some members of the East India Company who had been informed that the Englishmen had secretly treated with him, had become afraid I might wish to employ him. For the reason they have again treated with him."

On the strength of this one voyage of six months' duration we are expected to believe that this man, born in England, whose career was mainly continued and which ended in the service of the English Muscovy company, who could not speak a word of Dutch, who considered himself and was considered by the Dutch consul and by the King as an English subject, should be represented to us under a Dutch name and Dutch personality.

In the collections of the Hakluyt Society will be found, published under the title of "Henry Hudson, the Navigator," a large amount of collected material relating to Hudson. This includes the contemporary accounts of his voyages in English, Dutch, French, and Latin, with their English translations.

The man who was responsible for the name "Hendrick" being given to Hudson was Washington Irving, who took a poet's license.

Holland does not need to borrow the fame of others, she has plenty of her own to do her honor. X.

Hartford, Conn., May 7, 1906.

[In the article above referred to by our correspondent, the popular theory in regard to the name Hendrick Hudson was alluded to, and it is to us a matter of some satisfaction that the committee having the construction of the bridge in charge should have adopted a name which has become endeared to the popular mind, through him who has done so much to immortalize the Hudson River and to beautify its traditions. Had our correspondent gone still further in his examination into the facts of the case, he might perhaps, with propriety, have deprived Henry Hudson or Hendrick Hudson of all claim to immortality for his discovery of the river named after him; for it is fairly well accepted by historians to-day that this river had been discovered some years before by the Florentine explorer Verrazzano.—EDITOR.]

The Current Supplement.

The opening article in the current SUPPLEMENT, No. 1602, is an interesting and well illustrated one on the archæology of the Yakima Valley, Washington, by Harlan I. Smith, of the staff of the American Museum of Natural History. The late Nicolas Pike contributes an article on the "Coco de Mer," one of the most remarkable plants of the Seychelles Archipelago, where several of the islands have some magnificent forests of this unique palm. Of interest to agriculturists is the illustrated article entitled "Clearing New Land," by Franklin Williams, Jr., of the Department of Agriculture. Prof. E. Ray Lankester's article on "The Increase of Knowledge in the Several Branches of Science" is concluded. An interesting article specially prepared for the SCIENTIFIC AMERICAN SUPPLEMENT by John D. Isaacs describes a Rifled Pipe for Conducting Heavy Crude Fuel Oil. Another specially-prepared article describes a new excavating machine. F. A. Kummer discusses Recent Developments in Wood Block Paving. R. T. Lozier's paper on the Fundamental Principles of Gas Engines and Gas Producers is concluded. Dr. George E. Bolles discusses Chemical Affinity and Its Possible Causes. A well-illustrated and interesting article is contributed by W. H. Wakeman on Reversing Shaft Governor Engines. Finally, there is an interesting description of a New Substitute for Soap.

The output of brass in the United States for 1905 was 300,000,000 pounds.