protuberances of the skin are very plain. Its limbs are regular and properly shaped, including the finger-like toe of its feet, and its eyes and mouth are natural. There can be no doubt of its being a mummified frog, and now various and tough questions arise regarding it: How did it get that far under ground? How did it become embedded in that chunk of coal, which probably had been blasted from the centre of a thick vein? How many thousands of years had it been buried? and various other queries, which we will leave for the scientist to unravel and explain."

Mr. Stevenson tells me that he is personally acquainted with all the parties concerned in the discovery of this specimen, and has carefully examined the piece of coal whence the mummy was taken, and says, further, that it came from the vault, and not from either the sides or the floor of the mine.

He has done me the honor to turn the specimen over to me for diagnosis, as well as to take such steps as I saw fit to ascertain if there be any similar cases on record, and, finally, how geologists or paleontologists explain such finds as this. The specimen is now before me, and I at once recognized it as a species of Hyla, though I am unable to say which one. It apparently agrees in all its external characters with a specimen I have of Hyla versicolor, kindly diagnosed for me by Professor Cope last summer, though it is rather smaller. As will be seen

from the life-size figure I have made of it, which illustrates this letter, it is in nearly a natural position; its feet, however, are somewhat drawn up under it. I have figured it as viewed directly from above. It is completely mummified, and in a wonderfully perfect state of preservation, being of a dark, snuff-brown color, somewhat shrunken, and, in short, reduced to a condition, that, if properly excluded from the air, would keep for an indefinite length of time. I am aware that these tree-frogs very often climb into some of the most unheard-of places; but it struck me that it would be interesting to have some one tell us if they ever heard of a Hyla finding its way to the vault of a coal-mine 541 feet under ground, and climbing into the solid coal-bed after getting there.

R. W. SHUFELDT.

Fort Wingate, N. Mex., Sept. 14.

The source of the Mississippi.

A correspondent in the number of *Science* for Aug. 13 contributes an article on Captain Glazier's claim to have discovered the true source of the Mississippi. The writer commences by quoting *Science* of May 15, 1885, in which it is stated that Glazier gave his own name to the lake he discovered. This is an error invented by some official jealous that any man not in the employment of the government should presume to make a discovery falling within the range of the government survey. In the Brainerd *Tribune* of Aug. 14, 1881, occurs the following, from the pen of one of Captain Glazier's companions, a gentleman, it is to be presumed, of veracity. It may be premised that Brainerd is the nearest point to the source of the Mississippi that can boast of a newspaper. The writer says, after describing the ascent to the newly discovered lake through the stream that unites it with Lake Itasca, "On its one promontory our party landed after exploring its shores; and, after slaking our thirst at a spring of ice-cold water which bubbled up near by, the little party was marshalled in line, and Captain Glazier made a few remarks appropriate to the discovery of the true source of the Father of waters. After this, six volleys were fired in honor of the occasion, and then the question of a name for the new lake arose. *This being left for the captain's companions to decide*, Mr. Barrett Channing Paine, after alluding in warm terms to the time, money, and energy expended by Captain Glazier in this expedition, *proposed that it be named 'Lake Glazier'* in his honor. This proposition was received with applause, and carried by acclamation." Thus, we see, Captain Glazier did not 'give his own name' to the lake. He, on the contrary, suggested that it should retain its Indian appellation of 'Pokegama.'

There is nothing to be found in Schoolcraft's narrative to show that he penetrated south of Itasca. He speaks of an inlet to Lake Itasca leading from a smaller lake to the south, but clearly did not visit that smaller lake, and hence did not 'discover' it. Nor was it known to exist by Mr. Nicollet, who came after him. The latter explorer states that there are five creeks falling into Itasca. Captain Glazier discovered six, the sixth originating in a lake (not a lakelet) about five miles to the south of Itasca. This lake was not known to Nicollet. It lies nearly due south of the western arm of Itasca. He visited the others (which are mere ponds), but missed the most important one, probably owing to difficulty of access, the soil around it and for some distance from it being extremely swampy, and its inlet to Lake Itasca completely hidden by the densest vegetation. Such an inlet could not have been known to exist, except from the information of the Indian whose hunting-ground was in the immediate neighborhood. The 'infant Mississippi' flows from this lake, unknown until Captain Glazier forced his way into it in 1881, under the guidance of Chenowagesic. The lakelets or ponds shown on Nicollet's map have nothing to do with the source of the river; and the map itself, so far as Lake Itasca and its region are concerned, is altogether misleading. Itasca has three arms or bays, not two, as shown on Nicollet's map. The 'small lake south of and tributary to Lake Itasca' was not the lake discovered by the Glazier party; the lakes (or ponds) 'fully explored and mapped by Nicollet' did not include the Glazier Lake; and those 'surveyed, mapped, and named by the land office prior to 1879' were mere lakelets or ponds, all of them taken together considerably less in volume than the one discovered by Glazier. Your correspondent indulges in a glaring *petitio principii* in the paragraph from which the above quotations are made.

The following extract is from a letter received by the present writer in May, 1884, from Paul Beaulieu, interpreter to the White Earth Indian agency, Minnesota. Beaulieu is an intelligent half-breed, and has lived all his life within seventy miles of the head waters of the Mississippi. His letter was in answer to an inquiry as to the views of the people of that section on Captain Glazier's discovery. He writes, "I would respectfully state that, according to the ideas of the people of this section for scores of years past, in alluding to Lake Itasca, which is known only as Elk Lake, or Omushkos, by the Indians, it was never by them considered as the head or source of the Father of Running Waters, or May-see-see-be, as it is by them named. I have received a map showing the route of exploration of Captain Willard Glazier, 1881, and being well acquainted with his chief guide, Chenowagesic, who has made the section of country explored by Captain Glazier, his home for many years, and who has proved the truth of his often repeated assertion, when maps were shown him, that a smaller lake above Lake Itasca, would, in time, change the feature of those maps, and proclaim to the world that Lake Itasca cannot any longer maintain its claim as being the fountain head of Ke-chee-se-be, or Great River, which is called May-see-see-be by the Chippewas. The map as outlined by Captain Glazier's guide, Chenowagesic, and published by the Glazier party, *is correct*, and it is plain to us who know the lay of this whole country, (I mean by the word *us*, the Chippewa tribe in particular, also the recent explorers for pine,) that Lake Glazier is located at the right place, and is the last lake on the longest stream of the several rivers at the head of the great Mississippi."

Now, respecting the latitude given by Captain Glazier, it may be stated that he had with him no instrument for determining latitude; and assuming that the latitude given by Nicollet was that of the southern point of Lake Itasca, not that of Schoolcraft's Island, he did what any other person in like circumstances would have done, made as near an estimate as possible, and placed the new lake in latitude 10″ to the south of that given by Nicollet.

The extracts given by your correspondent from Schoolcraft and Glazier, in parallel columns, even if they do carry some slight resemblance, have no bearing whatever upon the latter's claim to have discovered a lake which was unknown to Schoolcraft, Nicollet, or the officials of the land survey. Whatever the merits of this controversy, it is most conclusive that there is a beautiful sheet of water above and beyond Lake Itasca, which the Indians and pioneers of northern Minnesota, as well as the majority of American geographers and map-makers, now recognize as Lake Glazier, the primal reservoir of the Great River. PEARCE GILES.

Boston, Mass., Sept. 4.

Hibernation of bats.

In a brief notice recently published in *Science* (viii. No. 187, p. 222), of a paper on the 'Migration of bats,' which I read at the Buffalo meeting of the American association, I am reported as saying that 'there is no evidence that any forms [of bats] hibernate.' Nothing in natural history is better attested than the fact of the hibernation of bats, and I hasten to correct the error made by your reporter.

C. HART MERRIAM.

An easy method of measuring the time of mental processes.

Lest it should seem that I lay claim to what is not my due, I would explain that I did not know of the exactly similar experiment of Dr. Oliver Wendell Holmes with a circle of people, until Professor Bowditch called my attention to it at the recent meeting of the American association. At that time the paper printed in *Science* had left my hands. I hasten to yield any claims to priority for this method of measuring simple reaction times for the privilege of having so distinguished an anticipator as Dr. Holmes.

I must thank Professor Mendenhall for the reference to his interesting article. I find, however, that his very ingenious method resembles the usual laboratory methods much more than it does mine.

JOSEPH JASTROW.

Germantown, Sept. 19.

The law of volumes in chemistry.

In my letter with the above title in *Science* for Sept. 10, there occurs an obvious error, since $1,628 \times 18 = 29,304$, and not 30,304. The slip of the pen was the more curious from the fact that the correct figures were already printed in my yet unpublished volume, 'Mineral physiology and physiography.' The above coefficient for the formula of water is calculated from the datum in Ganot's 'Elements de physique,' that the relation between the volumes of water at 0° and vapor at 100° = 1 : 1,698. I hope to discuss at length the questions raised in my late letter before the National academy of sciences at its meeting in November. T. STERRY HUNT.

Montreal, Sept. 17.

Cause of a recent period of cool weather in New England.

In a recent issue (*Science*, viii. p. 233) I called attention to a period of cool weather which prevailed in New England from Aug. 15 to Aug. 23, culminating on the night of Aug. 22; on which night, I now learn, frosts were observed in the lowlands near Boston.

I now desire to call attention to another aspect of this phenomenon; namely, that, while this abnormal cold prevailed at the earth's surface, at a not very great altitude above the earth's surface the temperature was above the normal, and increased during the night. At the top of Mount Washington the temperature was several degrees above the normal, and was slightly higher at the morning observation of the 23d than on the previous evening; but an absence of self-recording instruments prevents a more extended study of the phenomenon. This want was, however, supplied at Blue Hill, where a Richard thermograph at the top showed an almost continuous rise of temperature after the 11 P.M. observation of the 22d, until after noon of the 23d; while a Draper thermograph at the base of the hill, 400 feet lower, showed that the temperature fell almost continuously until 5 A.M. (about sunrise) of the 23d, at which time the temperature was more than ten degrees lower at the base than at the summit. Both thermographs showed short undulations common to thermograph curves. This fall in temperature during the night, no doubt, also occurred at the Boston signal office, since the temperature observed at 3 A.M. of the 23d was four degrees lower than at 11 P.M. of the 22d. The close coincidences between the readings of the self-record-