seems by inflaming the tissues to determine a flow of blood, and also to prevent the coagulation of blood or other proteid. (The blood subsequently coagulates in the mosquito's stomach.)

The poison-duct resembles a trachea in being transversely striated, but differs by the uniform diameter of its tubule of about 6 micromillimetres, by the absence of fine ramifications, and by the great thickness of its wall. The two ducts, proceeding one to each mandible, arise by the bifurcation of a common duct in the region of the neck below the œsophagus. Behind this the difficulty of dissection is considerable, as the parts are so small that they cannot be followed with low microscopic power; they are greatly entangled among the large muscles, tracheæ, and other furniture of the prothorax, and they are easily torn so as to be lost to the search. I have succeeded, however, by working back from the neck, in spreading out the entire system. The common duct arises from three prothoracic glands, all sessile on its lower extremity like the leaves of a trefoil, each supplied with a precurrent ductlet, the three ductlets meeting at a point so as to form the common duct. The glands are each about one-third of a millimeter in length and one-twenty-fifth in diameter. The two lateral glands are of the usual salivary kind common to insects. The central or azygos gland is entirely different, scarcely lobed, but being a mass of brown evenly distributed granules, with oil-like globules intermingled, its ductule having finer walls than in the lateral glands. We may regard this as emphatically the poison-gland, but the intermingled products of all three have their only outlet by the common duct, and thence by its two branches to the mandibles, which therefore play the part of 'poison-fangs.'

Some tentative notes recently given before the American Association involved inaccuracies, which are here rectified and the work completed. Measurements given above are from a small species which may perhaps be identified by its maxillary palps being as long as the maxillæ themselves. They seem to be the same for all the common species. G. MACLOSKIE.

Aug. 20.

Rockwood Meteorite.

ABOUT the middle of March last there was found by Mr. Elihu Humbree, on land owned by Mr. W. B. Lenoir, eight and one-half miles west of Rockwood Furnace, Cumberland county, Tenn., several pieces of what has proved to be a meteorite of very great interest, belonging to the rare class of siderolites, resembling in general appearance the Atacama but differing very widely in the nature of the silicate.

When first found it excited the curiosity of Mr. Humbree, and, after much pounding with an axe, he succeeded in detaching several large pieces and many fragments without finding the large lump of silver in it for which he was looking, the bright specks of nickeliferous iron scattered through the mass having been mistaken by him for that metal.

Three or four weeks later Mr. Lenoir, suspecting the nature of the find, secured the whole of it (with the exception of some small pieces which had been given to friends), and forwarded samples to us for examination. Two or three weeks later, on the 2d of June, I visited Rockwood, and brought the entire find away with me, with the exception of the small pieces already mentioned: these have nearly all been gathered up since and are now in our possession.

The main mass is an irregular ellipsoid, with one side a little flattened, and noticeable by the almost entire absence of the usual pittings, which are present elsewhere on the surface.

The three greatest dimensions are $14\frac{3}{4} \times 10 \times 8\frac{1}{2}$ inches. The weight, which owing to the loss of some of the fragments cannot be determined accurately, was about 83 pounds. Three other smaller masses bring the weight of the entire find to fully 100 pounds (probably two or three pounds more), of which to the present time we have secured $96\frac{1}{2}$ pounds. Specimens have been submitted to Prof. F. W. Clarke of the U. S. National Museum for examination, and very full analyses by Mr. J. E. Whitfield will be published as soon as the work is completed. The analyses thus far made show it to be in the main a silicate of alumina, lime, magnesia, and ferrous oxide, — probably in the form of anosthite and augite, with no olivine. Further analyses are being made to clear up this point. The iron grains contain 12 per cent of nickel, with a trace of copper, and, so far as examination has gone, seem to be distributed through the mass quite evenly; one nodule of iron, however, has been observed which measures three-quarters of an inch in diameter, and exhibits the Widmannstadtian figures very characteristically on the etched surface. Other nodules of iron equally large will probably be met with by further cutting. Although the analysis shows an unusually large amount of chlorine present, decomposition has only affected the surface and in the seams, and has been so little that the original black crust is preserved over a considerable portion of it.

This brings us to the interesting question of how long it could have been exposed to the action of the weather, and it is possible some readers of *Science* can help us to determine that important point.

In the late autumn of 1880, between five and six o'clock in the afternoon, a meteor was seen passing to the north-west over Morgan county, Georgia, which "left a dense trail, not very wide, of light-colored smoke, which could be seen for at least half an hour, and which gradually spread out thin and woolly, like ordinary smoke." A loud report, thought to be about three minutes after the passage of the meteor, was heard by persons who did not see it, as well as by those who were fortunate enough to observe its flight. It would be very interesting if a connection could be traced between this meteor and the meteorite found in Tennessee. If they are the same, it would seem that it should have been seen and heard by different persons all along the line. Any information on this subject will be thankfully received. EDWIN E. HOWELL.

Rochester, N.Y., Aug. 22.

Swill-Milk.

I HAVE read the discussion about 'swill-milk' recently published in *Science* with great interest, especially as I had thought the unhealthiness of distillery-slops as food for animals had been settled and agreed to fifty years ago. Will you permit me to cite an experience of my own bearing on the question? About fifty years ago, — I cannot give the precise date, — I worked in a 'pork-house' one winter, during which I trimmed the hams of five hundred 'still-fed' hogs. It was admitted by all hands that there was not a sound hog in the lot. But few of them were well fatted, although their appearance was good. It was not at all an uncommon thing, in cutting up a hog, to cut through an abscess, varying in size from a cherry to a half-pint; the largest one being in the region of the kidneys. The kidneys and 'tenderloin,' which lies along the vertebra in the region of the kidneys, were invariably infested with kidney-worms, and I have never had any desire to eat tenderloin since.

The testimony of all packers in that section of country — the Miami Valley — was that all still-fed hogs were similarly diseased, though not generally so badly as this lot. The meat was soft and oily, — unfit for barrel-pork.

Some years afterwards, upon my removal to this city, I called upon the butcher of whom I purchased my meat, who was an intelligent man, and asked him if he found the livers of well-fatted cattle in a healthy condition. His answer was no, that it was very rarely that the liver of a well-fatted beef was fit for human food, especially still-fed cattle. They, he asserted, were always diseased; and he added that he never bought still-fed cattle unless they had been taken off slops and fed on corn some weeks before being killed. He asserted that he could distinguish between still-fed and corn-fed beef, after it was slaughtered, by the sight and touch.

JOHN J. JANNEY.

Columbus, O., Aug. 19.

The Pronunciation of 'Arkansas.'

IT is really exasperating to be obliged to explain and apologize every time one pronounces this word correctly in intelligent New England circles, where the later and improper pronunciation was invented and has been established parasitic upon our nomenclature. Had not the Legislature of the State officially declared the final syllable to properly have the sound of *saw*, not *sass*, or had not the inhabitants, from earliest settlements, to say nothing of the people

of Louisiana, of which Arkansas was once a part, always pronounced it *saw*, there would nevertheless be no authority whatever for the curt and abbreviated *sass* which is generally given. The word is an attempt upon the part of the first French missionaries of Marquette's time to phonetically spell in French the name of a tribe of Indians, and no Frenchman would ever pronounce the combination of letters in the manner taught by the New Englanders. The final *s* was and is silent, and the *a* has the nasal *aw* so common in many Frenchmen's speech. As for the old comparativists, who, regardless of the inconsistency of English spelling, always inquire, "if Arkansas is Arkansaw, why is not Kansas, Kansaw," they may be glad to learn that Kansas was Kansaw, and early Anglo-American travellers so pronounced it, and even attempted to spell it phonetically in English, as can be seen in the report of Lieutenant Long's expedition to the Rocky Mountains, 1819–1821, where the word is spelled *Konza* — the nearest combination of English letters that can approach the true French sound.

But Arkansas is not the only French geographic term that has been sacrificed to the attempt of New England lexicographers to create in that region a standard pronunciation of the English. The word *chien*, for instance, which was originally applied to the Indians from their system of police, I believe, and meant literally the 'Dog Indians,' now graces the rivers, counties, cities, and mountains of our maps as Cheyenne, — the most plausible illustration of a Yankee phonetic-pronunciation of a French-spelled word.

'Arkansaw' may be difficult to say, and may fall heavily upon our ears, but it is proper all the same, and the sooner 'Arkansas' is abolished the better for out consistency. ROBT. T. HILL.

U. S. National Museum, Aug. 20.

Diagnosis of a New Species of Thrush (Turdus celænops sp. nov.) from Japan.

Diagnosis. — Back 'mummy-brown' (*Ridgway's Nomenclature of Colors*, pl. iii. Fig. 10); breast and flanks rufous tawny, unspotted; under wing-coverts gray; tail-feathers without white terminal spots; no light stripes about the eyes; second primary shorter than fifth. Adult male with head and neck black. Wing about 120 millimetres.

Type. — United States National Museum, No. 111,665.

Habitat. — 'The Seven Islands,' Idzu, Japan.

During a recent visit to 'The Seven Islands,' south of the Bay of Tokio, Mr. M. Namiye, of the Educational Museum, Tokio, among other interesting species, collected the thrush described above. Although nearest related to *T. chrysolaus*, the male of the new species is easily distinguished from all the forms belonging to the same group by the intensely black color of the head, neck, outer portion of wing, and tail. The female resembles more that of *T. chrysolaus*, but the back is browner, the tawny of the breast and flanks is deeper and more rufous, and the first (tenth, or rudimentary) primary is longer.

I am under great obligations to the authorities of the Tokio Educational Museum for the privilege of describing this interesting novelty. LEONHARD STEJNEGER.

Smithson. Inst., Washington, D.C., Aug. 18.

Audubon's Grave.

THE letter from Mr. D. S. Martin, in *Science* of Aug. 5, interested me very much, as it undoubtedly did every American naturalist; and there is probably no appeal that could be addressed to the naturalists of this country which would meet with a more liberal response than for the means to erect a fitting monument to Audubon.

But this appeal calls up another question in my mind, and, if at this distance I be correctly informed from what I have seen in the press columns, is not the great cathedral, which is to cost some ten millions of money and to be erected in New York City, on such a footing that there seems but little doubt that the structure will eventually be completed? And, further, if I read the words of Bishop Potter aright, is not the edifice when finished to be the 'Westminster Abbey' of the United States? Surely it would seem that the time has arrived when we should be able to point to some grand monument and say, within those walls repose the remains of America's great and honored dead. Such far-reaching projects when perfected ever tend to nationalize us, and to-day, as we are all aware, the ashes of the truly great men, men who have built up America's science, art, letters, and every calling which goes to make a nation great, are in many instances so obscurely rested, that I ween it would test the memory of the best of us to recall the spots where we have placed them.

Why not deposit the remains of our great naturalist, Audubon, in some perfectly secure vault for a few years longer, and then remove them to their final resting place, to their crypt in the great Abbey which is to be built, and then will every naturalist in the United States proudly come forward with his share towards closing the entrance of such a tomb with a fitting monument.

R. W. SHUFELDT.

Fort Wingate, N.Mex., Aug. 12.

Increasing Danger of Tape-Worm.

IN the Texas grazing region, from which has sprung, within the last two decades, the entire stock of range cattle of the western states and territories, the beef tape-worm is a most common occurrence. In fact, I do not believe I exaggerate when I say that at least every fifth person is afflicted. The cause of this is that on open ranges the eggs of tape-worm are most easily and widely distributed, and hence the cattle more frequently become infested with cysts. Stall-fed cattle, on the other hand, where the water is usually less subject to contamination, and the food cleaner, are only seldom infected, and hence tape-worm was not so prevalent in regions where the latter were used.

In the last few years, however, the shipment of range-cattle, by means of refrigerator cars, has become the chief beef supply of the East, and the danger and frequency of tape-worm greatly increased. Of course, no one should stop the use of well-cooked meat on this account, but rare and half-cooked meats can easily be avoided.

R. T. H.

Applied Optics.

WE are indebted to Prof. R. S. Heath of Birmingham, England, for a good book in our language, that at last gives us a theory, the Gaussian, that can be used in the discussion of lenses as we find them in telescopes. Heretofore, so far as I know, English writers have treated the imaginary case of lenses infinitely thin, and in practice have spoken in a vague manner of an optical centre. For a correct theory, one was obliged to recur to the memoir of Gauss, or to some of the German discussions of it.

In Mr. Heath's bibliography of this subject I find no reference to the writings of Biot, to which Mr. G. W. Hill called my attention some time ago. In his 'Astronomie Physique,' Biot devotes 540 pages to optical instruments, and he is so voluminous that it would require some patience to be sure of what he has done. I have the impression that he came near anticipating Gauss. Biot's first volume was published in 1841. Gauss read his memoir in December, 1840, but it was not published until 1843. ASAPH HALL.

Washington, Aug. 20.

Queries.

14. AN EXPULSION OF SPARROWS. — A curious thing happened here a week ago to-day. About four o'clock in the afternoon, a flock of birds — hundreds apparently — flew in circles round and round our house and garden, never settling. This continued for nearly an hour without a sound. Meantime our saucy sparrows disappeared, and have not yet returned. Our trees, which at dawn and twilight resounded with their chattering, are now silent and deserted. I had an opportunity the next morning of seeing closely one of the army of extirpation, — probably a deserter, for he was the only one left. I would describe the bird as about the size of the sparrow, very slender, with full black eye, dark mouse-color, with a light, almost white, breast. This morning for the first time since their expulsion came three or four of our native sparrows, but none of the foreign residents. I am curious to know if this happened any where else. My place being large, I could not see if my neighbors were visited likewise. W. A. G.

New Brighton, S.I., Aug. 18.