with the other — various small articles of food, in one case a small frog;" and also, "I have often seen the crow hold a frog or acorn firmly, with one foot on the ground or on a fence-rail, while he pecked away with his bill." Similar instances I remember to have read about, and one in the Bulletin of the Nuttall ornithological club, where it is described as holding a small bird, which it had killed in an aviary, in its claws, while it tore it in pieces with its bill, like a bird of prey.

The claws of the shrikes, weaker than those of the crows, and quite as insessorial, are used to seize and carry prey. A few winters ago I saw a shrike killed on the Boston public garden by the city forester's men, which had in its claws, during its flight, a still living English sparrow. That the crows in the above-mentioned instances, though perching birds, do use their claws as prehensile organs, I regard as evidence of their intelligence and reasoning power, which enable them, under exceptional circumstances, to use their perching feet for raptorial purposes. We must not measure animal intelligence by our imperfect and arbitrary zoölogical classifications. Since the writings of F. Cuvier, Flourens, and Fée, it seems impossible to deny the possession of a reasoning intelligence to animals below man.

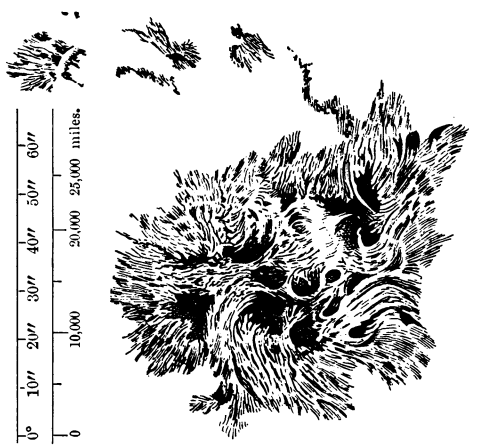
Leaving out of view the instance mentioned in no. 13, I think I have adduced sufficient evidence that the crows do *sometimes* — that is, when they find it necessary — seize and carry objects in their claws, like birds of prey. SAMUEL KNEELAND.

An interesting sun-spot.

The accompanying sketch represents the remarkable sun-spot of July (which was visible to the naked eye), and is of particular interest. I did not see it in its early or formative period, when this was taken; but from my knowledge of Mr. Very's experience and skill I have no doubt of the trustworthiness of the drawing in all its details. His remarks supply all the further information needed. S. P. LANGLEY.

Cambridge, Aug. 21, 1883.

I enclose a sketch of a large and unusually interesting sun-spot, as it appeared through the great equatorial of the Allegheny observatory, of 13 inches aperture, with the polarizing eye-piece. The drawing was made on the 26th of July, 1883.



The spot, while not so large as some, exhibited considerable activity and a remarkable assembly of odd forms, some of which appear so conflicting that it is difficult to imagine how they can exist side by side. The strong inrush from the following side gave one the idea of a viscid sheet or ribbon, rather than that of a bundle of filaments. It bore a striking resemblance to some of the forms which taffy assumes under the confectioner's manipulation. On the upper or northern side the filaments were more graceful, slender, and grass-like. The southern part was remarkable for the length and intensity of its curved filaments. (The longest could certainly be traced through more than 15,000 miles.) But perhaps the most curious portion was the centre, where a mass, possessed of photospheric brilliancy and fringed with curved and tangled threads, gave one the impression that a recently erupted facula, formed somehow in the very middle of the spot, was being torn to pieces by conflicting currents.

Numerous local whirls were evident, and the south-east half of the spot had a decidedly cyclonic appearance, the rotation being in an opposite direction to the hands of a watch. (It is to be remembered, that the drawing gives the appearance of a projection, and is therefore the reverse of a view by direct vision.) The north-west half of the spot did not show any such rotational tendency. F. W. VERY.

Allegheny, Aug. 20, 1883.

The right whale of the North Atlantic.

I am sufficiently impressed by the utter absurdity of occupying your valuable pages in discussing non-essentials; yet I am called upon by your critic to clear up two points remaining, both of which in any case hardly deserve serious notice. I will endeavor to close this correspondence by stating the facts.

Referring to Scoresby's pictures of the Greenland whale, I was led to attribute to the first or earlier one another authorship, from seeing in it so much error and exaggeration; and this because I had just read in Scoresby's book the following (Arct. reg., vol. i. p. 447. 1820): "I have confined my engravings, as well as my descriptions, to those animals that have come immediately under my own examination, or have been sketched by persons on whose accuracy and faithfulness I could fully depend; while drawings that I have met with, when the least doubtful, have been altogether rejected."

His second figure being so nearly correct, having evidently been carefully drawn from an entirely different and natural study of the animal, it was easy to assume, that, having first taken at second-hand an ill-considered sketch, he promptly replaced it by a better one. In this view it should not be assumed that we had any thing but the kindliest motives in thus speaking of this most eminent and valued man's work. In Scoresby's 'Arctic regions' (ed. 1820) the second figure of the Greenland whale appears. The caudal region, including the flukes, is entirely redrawn, showing the various elements that make up the beauty of those parts, as the carinae, etc. The other features, unfortunately, are not improved; yet more unfortunate is the fact that the earlier figure, with all its imperfections, has come down to us in most of the more important works.

With reference to the corrections of Scoresby's figures, we may point to an old work in the library of the American museum, which, by the way, is not noticed in Mr. Allen's bibliography; namely, "Histoire des pêches, des découvertes et des établissemens des Hollandois dans les mers du Nord, etc. Par Le C. Bernard DeReste. Tome premier. A Paris, 1801." This is an octavo volume, devoted almost entirely to cetaceans, and has large copper-plate engravings, one of which contains a right whale labelled B. franche, and another the sperm whale.

The former figure is in some respects better than Scoresby's, as to form and proportions; but a most singular treatment has evidently been accorded it. The elements of the figure have been transposed, and the belly made to serve the purpose of back, and *vice versa*. It is evident that the figure was copied from a real model, as the baleen is shown correctly, though it projects in one place outside the mouth.

The remaining point relates to the authorship of the volume on whales in the 'Naturalists' library.' The portion of the titlepage of our edition relating to this point reads as follows: "Mammalia — whales, etc. By Robt. Hamilton, Esq., M.D., F.R.S.E., etc."

We now desire to ask our critic how much remains to justify the serious charges which he has caused to be distributed wide-cast over the scientific world, to more or less inevitable damage to institution and person. J. B. HOLDER.

If Dr. Holder is satisfied with the way he has met 'the serious charges,' I am quite willing to here rest the matter; failing, as I do, to see that any of them are materially vitiated by his defence, while, amid the obscurity of much irrelevant matter, all of the more important ones are virtually conceded.

In regard to the authorship of the volume on whales in the 'Naturalists' library,' not only have I, as I have said before, examined anonymous copies of the original edition, and found it given as anonymous in bibliographies, but have seen it attributed by contemporary British cetologists to Jardine. The discovery, however, of a copy by Dr. Holder, having Hamilton's name as author on the titlepage, of course settles the question. J. A. ALLEN.

Achenial hairs of Senecio.

Mr. Jos. F. James does not know of any explanation of the use of the threads which are projected from the hairs on the achenia of most species of Senecio, etc. Before calling on SCIENCE to help him, he might read up his text-books, say Gray's Structural botany, p. 306. BOTANICULUS.

Kalmia or rhododendron.

In reply to Dr. Abbott, in SCIENCE for Aug. 17, I will call his attention to the fact that the woods of the kalmia and the rhododendron are quite distinct in appearance, and are not likely to be mistaken the one for the other. The kalmia wood is frequently found in commerce, in the form of handles for tools, such as chisels and the like. The wood is of a very light pink, with darker streaks through it resembling cells filled with woody fibre.

The rhododendron wood is destitute of such marking. As to size, I have seen plenty of the kalmia, four and five inches through the butt, in the mountains of Virginia; and have had in my possession sticks, large enough for any such purpose as the Doctor names, from eastern Pennsylvania. The rhododendron is an extremely rare plant in Chester and Delaware counties, Penn., but the kalmia is common.

S. P. SHARPLES.

Boston, Aug. 22.

THE SOCIETY OF MECHANICAL ENGINEERS.

Transactions of the American society of mechanical engineers. Vol. iii. New York, 1882. 350 p. illustr. 8°.

THIS third volume of the transactions of the youngest of the three great societies of engineers in the United States is a well-printed large octavo of over three hundred pages. It contains a list of the officers and members of the society, its rules, the proceedings of the Philadelphia meeting of 1882, and the proceedings at a memorial session in remembrance of Dr. A. L. Holley, a distinguished engineer and a founder of the society. The proceedings at the latter meeting consisted of an introductory address by president R. H. Thurston, in eulogy of the deceased, and a formal tribute to his memory by Mr. J. C. Bayles, the orator appointed by a committee for the occasion. Many members, as well as the appointed orators, paid earnest and eloquent tribute to the great engineer.

Among the more generally interesting and important papers, are those of Professor Egleston, on the appointment of a government commission to test iron, steel, and other metals; G. W. Bond, on the Pratt & Whitney 'standard gauge system;' Professor Robinson, on the thermodynamics of the Worthington pumping-engine; an essay on the progress of engineering science from 1824 to 1882, by Mr. Fraley of the Franklin institute; the windmill as a prime motor, by Mr. Wolff; and a long paper on the several efficiencies of the steam-engine, by Professor R. H. Thurston.

Professor Egleston gives a history of a movement among the engineers and scientific and business men of the country, to secure the establishment of a permanent commission to determine, by direct investigation, the absolute and relative values of constructive materials in the United States. Under the lead of the Society of civil engineers, such a commission was demanded by a very large number of the leading men of the country, and was created by act of Congress in the year 1875. It consisted of Col. Laidley, Gen. Gilmore, Com. Beardslee, Chief-engineer Smith, Dr. A. L. Holley, and Professor Thurston, the latter acting as secretary. This commission, in the course of two years, working amidst many discouragements, did an enormous amount of work; the results of which are published in a report consisting of two large and fully illustrated volumes recently issued from the government press. The commission was not well sustained. Congress refused to continue its appropriations; and it ceased to exist, despite the protest of all the leading technical societies, polytechnic schools, the principal colleges, and such associations as that of the iron and steel makers. The effort is now making, to revive this commission, and to secure the continuance of its work. The publication of the enormous mass of information acquired by the board during the period of