

The principle adopted is that of condensing moisture upon the *inside* of a polished cylinder the outside of which has been cooled. This instrument described in the *Journal de physique*, April, 1883, consists essentially of a brass cylinder, nickel plated, and highly polished on the inside, provided with two fine tubes near its ends. Through one of these, by means of a rubber tube conducted to the exterior air or to any point at which it is desired to obtain the hygrometric state, the air is drawn into the polished cylinder by using an aspirating-bulb attached to the other. At the first extremity is placed a ground-glass plate, which permits light to enter. This light appears as a bright annulus enlarged three times, as viewed by a magnifier at the other end.

The cylinder is supported in a box, through the centre of which it passes horizontally. This box is provided with two openings, as in an ordinary condensing-hygrometer, through which, by aspiration or by blowing, ether contained in the box may be evaporated, thus lowering the temperature, which is indicated by a properly adjusted thermometer.

In observing, air is drawn into the cylinder by an aspirating-bulb, and at the same time the ether is evaporated. The moment dew appears on the inside of the cylinder, which is easily seen, the reading of the thermometer gives the dew-point. This may be readily obtained again and again with an error less than 0.1° C., or 0.18° F.

Some of the advantages claimed, are the possibility of guarding against varying air-currents; the delicacy of adjustment; the ease and accuracy of observation with the magnifier; the easy manipulation of a uniform light, so difficult to obtain in the ordinary form; and the use of the apparatus in the house for determining the dew-point of the outer air.

In regard to the last advantage claimed, it may be said, that if accurate results can thus be obtained when the air-temperature is from -40° to -60° , or when there is a difference of forty or more degrees between the air-temperature and the dew-point, the instrument will be of great service; but there should be some means of aspirating the outside air through the ether, and the apparatus should be very carefully isolated by non-conductors of heat, as the heat of the room would make a sufficient cooling impossible under the conditions just named. The possibility of easily securing such isolation without interfering with the working of the apparatus seems the most important advantage to be derived from its use.

H. A. HAZEN.

THE RIGHT WHALE OF THE NORTH ATLANTIC.

THE four plates devoted in Dr. Holder's recent paper on this subject¹ to the external and osteological characters of the right whale of the North Atlantic (*Balaena cisarctica* Cope = *B. biscayensis* of European cetologists), and the seventeen pages of text descriptive of the same, form a welcome and valuable contribution to the history of a species possessing peculiar interest. Its habitat being the temperate waters of the North Atlantic, — extending from the coast of Florida and the Bay of Biscay, northward to southern Labrador and Iceland, — it was pursued off the coast of Europe for centuries before the Greenland whale (*B. mysticetus*), the basis of the great northern whaling industry of modern

times, became known to Europeans. It was hunted by the Basques and Norwegians as early as the ninth and tenth centuries, was the basis of the whale-fishery of the fifteenth and sixteenth centuries, and was already approaching extinction in European waters, when the great arctic or Greenland whale first attracted the attention of whalers, early in the seventeenth century. The latter, from its greater size, easier capture, and larger numbers, its greater yield of oil and superior quality of baleen, became at once the chief object of pursuit; and the earlier known species was quickly lost sight of as a commercial animal, except on this side of the Atlantic. Here it was the species chiefly hunted by American whalers down to about the middle of the last century, when from its rarity its pursuit was gradually abandoned for that of the arctic species. The cisarctic animal was early known to the French as the 'sarde,' to the Norwegians, Dutch, and Germans, as the 'nordkaper,' and to the Icelanders as the 'slet-bag.' To Americans it was known under the various names of 'northcaper,' 'Grand Bay whale' (in reference to the Bay or Gulf of St. Lawrence, where it was chiefly hunted), 'seven-foot-bone whale,' and 'black whale.' Under these names it was briefly described by various early non-scientific writers, and, in the works of the early systematists, was very inadequately characterized under various systematic names. It is the *Balaena glacialis* of Klein (1741) and Bonnaterre (1789), the *B. islandica* of Brisson (1756), and the *B. nordcaper* of Lacépède (1804). It was, however, practically unknown to science, till the researches of Eschricht and Reinhardt, published in 1861, led to its rediscovery, having been, until then, generally confounded with the *B. mysticetus*. During recent years it has several times been taken off the coast of southern Europe and in the Mediterranean. These specimens have formed the basis of important memoirs, and given rise to additional specific names. It is, however, now commonly known in Europe as *Balaena biscayensis*, the name originating really with Gray, although almost universally ascribed to Eschricht, who merely designated the species by an equivalent vernacular name. It was redescribed by Cope in 1865 as *B. cisarctica*, from a specimen taken at Philadelphia, the skeleton of which is now in the museum of the Philadelphia academy of natural sciences. Ruling out the name 'islandica' of Brisson, on the ground that it antedates the binomial system, and 'glacialis' of Bonnaterre as untenable from its misleading tenor, we have left, of the earlier names, 'nordcaper' of Lacépède, which is objectionable only from its barbarous character, but no more so than hundreds of other names currently employed in zoölogy, save by a few purists who admit nothing that is unclassical.

Dr. Holder describes and figures, 1°. The external characters of a male specimen taken off the New-Jersey coast in the spring of 1882; 2°. The skeleton of a specimen (sex unknown) stranded some years since on Long Island; 3°. Through notes furnished by Dr. G. E. Manigault, a specimen captured in the harbor of Charleston, S.C., in January, 1880. Professor Cope's specimen, and two of the three here mentioned, are more or less immature. There is, however, the skeleton of a fully adult example, taken at Provincetown in 1865, in the Museum of comparative zoölogy, of which, as yet, no description has been published. The New-Jersey example not having been preserved, there exist at present four skeletons of this species in American museums. Dr. Holder figures the skull of the Charleston, the external characters of the New-Jersey, and the

¹ *Bull. Amer. mus. nat. hist.*, vol. i. no. 4, pp. 99-137, pl. x.-xiii., May 1, 1883.

skeleton of the Long-Island specimens, and gives measurements and details of the external characters and osteology, all of the highest importance; our only regret being that he did not, respecting some points, make fuller use of his opportunities. We wish we could speak with equal satisfaction of the historical portion of his paper, comprising one-half of his text. Besides numerous outrageous typographical errors (a part of which, however, are corrected on an *errata* slip), relating to proper names and titles of works ('Researches' and 'Reserches' for 'Recherches,' 'Seibold' for 'Siebold,' 'Van Benedin' for 'Van Beneden,' both the latter in repeated instances, and various others of like character, are among those still uncorrected), there are errors of statement of so grave a character as to require notice. It would seem, for instance, that only the merest novice in cetology could have been misled into supposing that the quotation given at p. 114, respecting a whale captured far up the St. Lawrence River in August, 1871, and reported as 'Balaena mysticetus,' was any thing but a rorqual or fin-back whale (in all probability, *Balaenoptera musculus*), much less into an attempt to explain away the evident discrepancies to make it referable to the North Atlantic right whale; yet we find our author devoting several pages to an attempt at this absurdity. Again: in the strictures passed upon Scoresby (pp. 121, 122), he informs us that "his [Scoresby's] inability to portray the subject pictorially was a misfortune," and that "he furnished to science an incorrect figure, at *second hand*," of the *B. mysticetus*, and considers it 'deplorable' that "nearly every book published to this day, having an illustration of *B. mysticetus*, shows a manifest copy of Scoresby's figure." That it was the best figure, if not quite correct in all points, of the species down to 1874, when Scammon's admirable illustration was published, has, I think, hitherto been unquestioned; and if our author has evidence that Scoresby's figure (or rather figures, for he gives two) was not original, its presentation would be undoubtedly a revelation to cetologists. That our critic of Scoresby is none too familiar with Scoresby's cetological writings is evident from his statement, that Godman (p. 129) "gives a lengthy account of the mysticetus, with an amount of anatomical and physiological knowledge of the subject quite unusual;" the fact being, that Godman's account is an uncredited compilation from Scoresby, whole pages being taken entire, and without change, from Scoresby's work, particularly in his notice of the whale-fishery. Bachstrom's figure, published by Lacépède as representing the nordcaper, and which is accepted by Dr. Holder as such, recent eminent authorities have unreservedly referred to *B. mysticetus*; yet on its interpretation as a representation of the nordcaper rests much of Dr. Holder's criticism of Scoresby. We are surprised to see no reference to the various recent original memoirs relating to the so-called *B. biscayensis*, either in the author's formal notice of the 'Right whale of Europe' or in the bibliography of the general subject given at the end of the paper. In 'the list of works referred to' the uncorrected errata are numerous; 'J. C. Gray' (four times repeated), for example, standing for 'J. E. Gray,' 'Col. Hamilton' (also on p. 129) for 'W. Jardine,' etc., while there are also inaccuracies of dates. While, as above said, Dr. Holder gives us valuable information about the external appearance and osteology of the North Atlantic right whale, his historical *résumé* is seriously defective and misleading.

J. A. ALLEN.

FIG-INSECTS.

FEW insects offer more remarkable structural peculiarities, or have more puzzled systematists, than the minute Hymenoptera associated with the caprification of figs. Part I. of the transactions of the London entomological society for 1883 opens with a very interesting illustrated paper by Sir Sidney S. Saunders, descriptive of fig-insects allied to *Blastophaga* from Calcutta, Australia, and Madagascar, with notes on their parasites and on the affinities of their respective races.

It is chiefly as a contribution to the discussion of the affinities of these insects that Mr. Saunders's paper possesses so great an interest. In the transactions for last year, Westwood, by certain authoritative statements, appeared to settle the place of the fig-insects (at least, for the genus *Sycophaga*) as among the Chalcididae, and not far from Callimome. He remarks, "The structure of these fig-insects, especially as shown in the females (whose character must be shown as more truly normal than that of the males), recedes so entirely from that of the Cynipidae that we cannot for a moment adopt the suggestion that the fig-insects are Cynipidae. . . . Hence M. Coquerel had no hesitation, in describing the female of one of his fig-insects, to give it the name of Chalcis? explorator; and it is impossible to compare his figure of that insect, or mine of *Sycophaga crassipes*, with a female Callimome, and not be convinced that the fig species are most closely related to Callimome (many of the species of which are parasitic upon the gall-making Cynipidae). The structure of the antennae (even to the minute articulations following the second joint), the fusion of the three terminal joints of these organs, the structure of the wings and wing-veins, and the long exerted ovipositor, sufficiently prove that these insects must be placed in the great family Chalcididae."

Mr. Saunders differs from Westwood in these conclusions, showing that the place of the whole group must not be considered in so sweeping a manner. He disposes of the relationship of the group to Callimome by the following points: 1. The minute articulations in the antennae of the female *Sycophaga* do not correspond with any in the same sex of Callimome, nor do they occur in *Blastophaga*, the antennae of which also differ in other respects from Callimome. 2. The fusion of the three terminal joints, while found in *Sycophaga*, does not occur with *Eupristina* nor with *Agaon*. 3. The wing-veins differ *inter se* among the fig-insects, and Callimome does not coincide with *Eupristina* in this respect; moreover, the wings are invariably absent in the males of the fig-insects. 4. The ovipositor of fig-insects varies in length, and always maintains an arcuate position. The argument which Westwood brought up in a later paper, of the similarity of the dentate genital claspers of *Sycophaga* to those of *Platyesopus* and other Chalcids, Saunders disposes of by saying that this character can have no tribal value, as it is found alike in *Sycophaga* and several of its parasitic associates; moreover, this character is not present in Callimome.

Mr. Saunders's final conclusion is, that this anomalous group which he calls *Sycophagides* should be placed under the Cynipidae in the following manner:—

1. *Prionastomata*. — *Blastophaga* Grav., *Agaon* Dalm., *Sycocrypta* Coquerel, *Eupristina* S. Saund., *Pleistodonta* S. Saund., *Kradibia* S. Saund.
2. *Aploastomata*. — *Sycophaga* Westw., *Apocrypta* Coq. C. V. RILEY.