

occupy the same volume." From experiments on friction of gases, velocity of gaseous diffusion, &c., conclusions have been drawn as to the sizes of different molecules; Avogadro's law, however, says nothing as to the relative dimensions of molecules: the conclusion drawn by the author from Avogadro's law is therefore I think rightly called an "erroneous" conclusion, apart from any considerations as to the accuracy of the statement, "the molecules of all gases are of the same size."

A knowledge of the "atomicity" of the most important elements would, I admit, be of much importance. But when the evidence on which this or that value is assigned to the "atomicity" of these elements is examined, it is found in most cases to be very slight: a great structure has been raised on a shifting foundation. A student who has committed to memory the assertion that the "atomicity" of the nitrogen atom is five is probably ready to receive with gratitude the formula for nitrous oxide referred to; had he asked for the evidence on which the assertion as to the atomicity of nitrogen rests, and for an explanation of the assertion itself, he would I think hesitate before accepting the graphic formula in question as in any way affording "accurate and well-grounded information."—THE WRITER OF THE NOTICE.]

The Recent Weather

REFERRING to the leading article on "The Recent Weather" in a former number, perhaps the following proverb, prevailing I think in Norfolk, may possess some interest:—

"When Martinmas ice will bear a duck,
The winter will all be mire and muck."

Martinmas Day is on November 11. Bearing in mind that Martinmas, like Christmas, connotes a season rather than a particular day, and still more, that cold weather would usually come earlier in Scotland than in the eastern counties, the proverb seems to be entirely in unison with Sir Robert Christison's prognostic.

CHARLES J. TAYLOR

Toppsfield Rectory, Halstead, Essex

FATHER LOBO'S "ABYSSINIA."—A correspondent asks if there is any trustworthy evidence that Lobo's "History of Abyssinia" was ever published in Portuguese, as stated in most biographies. The extracts translated by Sir Peter Wyche and published by the Royal Society in the end of the seventeenth century, were made from the manuscripts, as was also Legrand's translation in the beginning of the eighteenth, from which Dr. Johnson made his epitome. In Barbosa-Machado's "Bibliotheca Lusitana" there is no mention of a Portuguese edition.

ON THE WHALE FISHERY OF THE BASQUE PROVINCES OF SPAIN¹

MY attention was drawn to the Basque Whale-Fishery by observing, during my study of Arctic literature, and especially while editing the voyages of William Baffin, that the first English whaling vessels were in the habit of shipping a boat's crew of Basques to harpoon the whales. I was informed that a whale, the *Balæna biscayensis*, had frequented the coasts of the Basques provinces from time immemorial; but that it had become nearly extinct in the seventeenth century, when the Basques began to extend their voyages further north, and across the Arctic Circle. Hence the Basques had become dexterous whale-fishers long before any other European people had entered upon that perilous occupation.

I found that several naturalists had investigated the history of the Biscayan whale, notably Eschricht and Reinhardt in Denmark, M. Fischer in France, and Prof. Flower in this country. Full information respecting these investigations is contained in Eschricht and Reinhardt's memoir, published by the Ray Society in 1866; and many interesting particulars have since been brought to light respecting the whale-fishery so far as it relates to the French Basques, and to the ports of Bayonne, Biarritz, Guétary, St. Jean de Luz, and Ciboure. But in looking through the books and papers on the subject, a list of which was kindly

¹ By Clements R. Markham, C.B., F.R.S. Read at the Zoological Society, December 13. Revised by the Author.

furnished to me by Prof. Flower last June, I did not find any particulars respecting the Spanish ports, where the Basque sailors are more numerous than in France, and inhabit a more extensive line of coast. I therefore thought it possible that, by visiting those ports and making inquiries respecting the literature of the provinces in which they are situated, and the local traditions, I might be able to collect some further information touching the whale-fishery of the Basques. It has now been suggested to me that such particulars as I have succeeded in bringing together, from their bearing on the history of the *Balæna biscayensis*, a nearly extinct animal, would be interesting to the Zoological Society. I therefore have pleasure in communicating the following notes on the subject.

The coast which I personally visited this summer extends from the French frontier to the Cabo de Peñas, including the Basque provinces of Guipuzcoa and Vizcaya, and the purely Spanish provinces of Santander and the Asturias. It is for the most part bold and rocky, with lofty cliffs of cretaceous limestone, having strata hove up at great angles. Occasionally there is a stretch of sand, generally at the mouths of rivers, and here and there a rocky little boat-harbour. Forests of oak and chestnut clothe the mountains, with occasionally open spaces of fern and heather and bushes of arbutus and myrtle. In some places the chestnut-groves come down almost to the water's edge. Along this coast there are many small fishing-towns. Fuenterrabia, on its picturesque hill, overlooks the French frontier. Following the coast to the westward the next port is Pasajés, and then comes the city of San Sebastian, which was the centre of the old whale-fishery. Zarauz is a town stretching along the shores of a sandy bay. Guetaria is built in a cleft of rocks which are sheltered behind the island of San Anton. Zumaya and Deva are at the mouths of rivers; and Motrico is a picturesque little town built on steep slopes like Clovelly, overlooking a rocky bay. These are the ports of Guipuzcoa.

Ondarroa, at the mouth of its river, where small schooners are still built, is the first port of Vizcaya, coming from the east. Lequeitio is a large and more important place, sending out about a hundred fishing-boats. Next come Mundaca, at the mouth of the river of Guernica, Bermeo, another populous fishing-town with as many boats as Lequeitio, Plencia, and Portugaleta and Santurce in the bay of Bilbao. These are the principal Vizcayan ports. The province of Santander has Castro-Urdiales, Laredo and Santoña on the shores of a large harbour, Santander itself, and San Vicente de la Barquera. In the Asturias are the ancient ports of Llanes, Rivadesella, Villaviciosa, the important town of Gijón, Candas, and Luanco. From the little village of Luanco to the end of the Cabo de las Peñas is a walk of eight miles, and this was the most western point I reached.

The Basque fishermen are a handsome race. They go away on their fishing-voyages for many days, and are brave honest, and industrious; while both men and women are always cheerful and light-hearted. They belong to a people who, for centuries, have repelled foreign invasion, have enjoyed free institutions, and made their own laws. The Basque fishermen are the descendants of the old whalers, and retain their traditions. They have, from time to time, produced naval worthies whose names are historical. Among them are Sebastian del Cano, a native of the little fishing-town of Guetaria, who was the first circumnavigator of the globe; Legaspi, the conqueror of the Philippine Islands; Machin de Munguia, the Spanish Grenville; and Churruca, whose gallantry at the battle of Trafalgar won for him the admiration of his English foes.

Such men were the product of the whale-fishery, which was for the Basques, as it has since been for the British, an admirable nursery for seamen.

My first inquiries had reference to the antiquity of the