

Correspondence.

Drainage Schemes in Southern Florida.

To the Editor of the Scientific American:

I have just read an article on the drainage schemes of the Disston Company in Florida, published in your issue of April 17, and credited to the *Atlanta Constitution*.

It was my good fortune to traverse the lower canals connecting Lake Okeechobee with the head waters of the Caloosahatchie River during the past winter, and to make a complete circuit of Lake Okeechobee. A desire that the truth should be known would lead me to correct some of the rather glowing statements in the article referred to.

In the first place, the statement that a canal has been opened to the Atlantic is totally erroneous. Such a canal exists only on the maps of the Disston Company. The canal is designed to lead from the lake at Chaney's Bay on the northeastern shore. Having explored this locality in a small boat on the morning of Feb. 18 last, I can say with reasonable confidence that no such canal has been begun.

Neither is the waterway through the canals such a one as the article would lead one to suppose. The upper canal connecting Lake Okeechobee with Lake Hickpochee, about three miles and a half long, is only about twenty feet wide. It is absurd to suppose that such a ditch can have affected the depth of water in Lake Okeechobee to any extent. In fact, the most claimed for it is that it has lowered the lake about one foot. Where the canal enters Lake Hickpochee, mud deposits have been formed, so that we found great difficulty in getting through with a yacht drawing two and a half feet.

At the upper end of Lake Flirt also we found insufficient water to float our boat, and were obliged to drag her through the mud.

There is a general sentiment along the Caloosahatchie River that the whole undertaking is a well-masked land steal.

A map showing the lands of the company will lead any intelligent observer to wonder what claim it can have on thousands of acres of land apparently so situated as to receive no possible benefit from the drainage improvement.

As to the Kissimmee valley, I can say nothing from actual observation. Most astounding stories are told of its productiveness and of the fortunes realized from single crops on the reclaimed land; but in the background of these stories one can generally distinguish an interested "promoter."

To learn facts about Florida, one must visit it as a pleasure tourist only, apparently at least with no intention of buying land. Nor can he learn much of value in the big hotels of the St. John's Valley. Let him visit the Gulf coast and spend months drinking in its delicious air, and he will surely learn to love this much-abused and over-lauded land, and long to return to it before another winter. F. L. BLISS.

The Atlantic Right Whale.

To the Editor of the Scientific American:

In your issue of February 20, Mr. Holder takes me to task for inaccuracy. He says: "His statements (October 17, 1885) would not readily have met with question twenty years since, but in the light of present knowledge he is questioning true record."

Will Mr. Holder be kind enough to specify where my lack of "present knowledge" crops out, even if I might have been right twenty years ago? My article referred to the "American Whale Fishery," and was simply giving its present status, and what I wrote will bear the closest scrutiny. Mr. Holder says frankly, "I have not statistics at hand." Unfortunately, I have, and every item given by me was taken from published documents, which cannot be questioned.

The point as to whether I was right, or he, as to the species of whale represented in your paper of August 8, 1885, is not of much consequence. The figure is not a good one, and must be taken at random; but it seemed to me more like *mysticetus* than *cisarcctica*, and I think so still. It has not enough "steep top" for an Arctic right whale, but it has altogether more of it than I have ever seen on the *cisarcctica*. Their heads are not shaped like that. If Mr. Holder will look into Harper's *Young People* for April 18, 1882, he will find a drawing made by Dan. Beard, which shows the true shape of the top of the head of *cisarcctica* better than any other that I know, excepting, of course, Mr. Holder's own accurate figure. I had examined that specimen very carefully before Mr. Beard made his drawing, and I have seen too many of them, both in the water and dead on the beach, not to speak with some degree of confidence.

But the remarkable feature in this paper by Mr. Holder has no reference to my evil doings. He tells us that the *cisarcctica* is a new comer, for the present time, on our coast! He says that they disappeared in the latter part of the eighteenth century; that the "North Atlantic right whale remained extinct, as was supposed,

till 1854," and then was detected only in the Bay of Biscay.

"In 1865, Prof. Cope brought the subject into shape, etc. . . It was in the spring of 1882 that the first opportunity occurred to examine a full grown Atlantic right whale, the species having been nearly extinct during the period commencing about the year 1770." And then he specifies six being seen off Amagansett in 1884, and two or three more in 1885, and concludes: "From a long period of supposed extinction, this whale is now evidently becoming more numerous." All that I can remark as to this is that such statements as these would be exceedingly apt to cause any inhabitant of the east end of Long Island to "smile out loud." The idea that whales were a new thing in their experience!

The fact is that whaling stations have existed at each of the four villages of the South Side—Southampton, Bridgehampton, Easthampton, and Amagansett—during all the time of my knowledge of that region, which reaches back more than forty years. The first whale I ever saw killed was in 1846, and the habit of watching for them and killing them was then so old that no one thought anything of it. That was a *cisarcctica*, as I now know, but I was then too young and inexperienced to detect the difference, and I supposed it to be what it was called, a "right whale," that is, the *mysticetus*. I examined it sharply and made my drawings, but attempted no publication, which would have been at the time, and in the circumstances, premature and foolish.

That the species was the same one which Cope nearly twenty years later named *cisarcctica*, I think I can say that I know. That any other species of right whale comes along our coast does not seem probable; at least, I have never seen any other. They do not apparently strike in shore near enough to be seen from the beach more than about thirty-five miles westward from Montauk; and as Amagansett is the village furthest eastward, it is quite natural that they should get more whales than "the Hamptons," though captures at all the points have occurred at intervals. One whaler, specially, at Amagansett, for the last twelve or fifteen years, has attained much distinction from his success. "Capt. Josh." wears the champion belt of the East End, and Amagansett has come to the front in notoriety by this means.

I do not know that the whales of late are any more abundant than they were fifty years ago, though it is by no means impossible; but that they are no new arrival is certain. That they did not become "known to science" until 1865 was not the fault of the whales. Mr. Holder's admirable and enthusiastic account of the *cisarcctica*, published in the *Bulletin* of Museum of Natural History of Central Park, with its full and accurate drawings, leaves little to be desired; but it is right that the life history of South Side whale fishing should be set forth correctly. W. O. AYRES.

Compressed Air for Small Motors.

To the Editor of the Scientific American:

It seems to me quite manifest that so much interest has already shown itself in relation to this topic, and is cropping up in various directions, that it is quite reasonable to hope for practical results at no distant period. The article written by me on compressed air for lifeboats, printed in your number of July 3, and again in the SUPPLEMENT of July 17, evidently struck the right point, as clearly shown in the comments on it which appear in the issue of July 24.

Those made by Captain Forbes are specially noteworthy, and, coming from a man of his standing and great practical knowledge, deserve every attention. His suggestions on direct propulsion by a pneumatic current may perhaps make it advisable for us to look at it again more closely.

I first brought the subject forward in your columns, January 5, 1884, basing my preliminary propositions on the well-known modes of motion and rapidity of swimming of our common squids or cuttlefish. That article attracted little attention at the time, but perhaps it is coming to the surface now. The mechanical principles involved seem to be correct, and without a flaw. The *entire amount* of the force at command is expended in the effort to send the boat ahead, on the calculation that, as action and reaction are equal, the current which acts *directly backward* must react *directly forward*, and the movable body, the boat, must be driven ahead with the absolute force employed. Nothing is lost by indirect action, by friction, by weight of machinery, etc. This is the theory, simple enough in itself, but it involves a great number of details. Among the several patents which have been taken out to cover this idea, the position of the jet or jets to be employed has varied not a little, and I regard it by no means impossible that this point has had more or less to do with the fact that the plans have not been successful. At least, as no tangible and current results from them are known, I infer that practically they have thus far failed. Mr. Forbes himself puts forward a suggestion as to situation, which with all proper respect I would like to amend. And perhaps I can meet the different objections, and put the subject in what I believe to

be its best light, by sketching rapidly the plan as it is in my own mind.

The air, retained in any suitable reservoir (perhaps coiled steel pipes, as suggested, may be the most suitable), is used always at a very high pressure. All my calculations are based on the assumption that the initial pressure is 3,000 pounds, and that at the close of working it has not run below 1,000. It is a very simple matter to calculate the capacity of reservoir required for the size of our boat and the length of service needed. The air thus retained, and always ready for service, is conducted in the most simple manner possible, by a pipe with stop cock, to the place of exit. This place of exit and the environment of the discharge are, in my judgment, among the most potential factors of success.

The place is to be, not at the stern, as set in several of the patents, nor "on the quarter well aft," as mentioned by Captain Forbes, but as nearly in the median line as possible, and *well forward* instead of aft. Let us confine our estimates to an ordinary sixteen foot Whitehall boat, for it will give us figures with which to work. Directly by the side of the keel, the planking being suitably strengthened, six feet from the stern, the exit pipe goes straight down through to a length of five inches. Of this five inches, the terminal three is bent up, but not quite to a right angle. It cannot be done with an elbow, for the object is to drive the jet of air slightly downward and directly backward. Of course, this torrent of air is limited in its lateral expansion on the one side by the keel. It is equally limited on the other side by a projection solidly attached to the boat's bottom, commencing a foot in front of the place of pipe exit, and continuing aft as far as needed, five or six feet at least. The current of air thus used in propelling the boat is expending its energy on a body of water six inches wide, which is open freely at each end. The water actuated by the jet, and displaced, is instantly and constantly replaced from forward, and as the boat rushes rapidly forward, no power is lost.

The slight downward direction is given to the jet because of the difference in the gravity of the water and the air. The length of space through which the lateral limitation should extend can be determined doubtless only by trial. As for backing the boat, another pipe is too easy of arrangement to need a word. As for steering the boats by means of two jets, it is doubtless practicable, but I prefer decidedly to make use of our present means, a rudder. W. O. AYRES.

Making and Manufacturing.

There is little doubt that the changes which have taken place in the mechanic arts, the change from *making* to *manufacturing*, as technically understood, has much to do with the aggregation of working people into trades unions. In shoemaking, for instance, every journeyman shoemaker, every 'prentice, expected some day to have a shop of his own. He learned to *make shoes*, not just *part of a shoe*, and the goal he aimed at did not seem difficult of attainment, because it only implied the possession of small capital. The ambition of a workingman was easily fostered, because it did not seem impossible of attainment. Such men had in them the making of better citizens perhaps than the piece workers of the present day. Strikes were almost unknown, and there was no special identification of the interests of all. Under the new *regime* things are different. Every individual knows his services are worthless without those of the others, he is identified with them in interest, and naturally they unite in associations. The mere union makes strikes possible. The question arises, because we always think of *progress* as beneficial, wherein lies the advantage of the present system over the old? In the first place, in the cheapening of the product. Shoes cannot be made and sold as cheap and good in the old way as the new. So far as the working people are concerned, there must be some compensating good even to them. While the unions have up to this time been of questionable benefit, it is seldom there is an evil without its compensating good. And if the unions have not yet fallen into the line of accomplishing solid good to their members, it is because they are yet new, and to a great extent have been controlled by those who lacked judgment or had ulterior purposes to serve.

We believe the time will come when the existence of unions will be obviously beneficial to both employers and employees.—*Leather Gazette*.

LET those who think they know, without ever having looked to see, review their supposed knowledge and cast their thoughts over again; and if, in the particulars, they find they have mistaken words and fancies for realities, and accepted the *dicta* of pretenders instead of the evidence of observed facts, let them correct the record and acknowledge the truth as it is in nature. Moreover, let them remember that he who propagates a delusion, and he who connives at one when already existing, both alike tamper with the truth, and that we must neither lead nor leave men to mistake falsehood for truth. Not to undeceive is to deceive.—*Dr. T. Wharton Jones*.