

ticularly prominent. During dull seasons in logging, this form of scow can be used in general wharf construction and repair work without any alterations whatever, which makes it an especially advantageous type. Two of the views show the scow salvaging logs, a work in which it is frequently engaged. Towing logs in northwestern waters is precarious work, and during the year many tugs, while *en route* to the mills, are caught in sudden storms and lose their tows, which eventually find lodgment on some exposed shore.

Saving these logs is a difficult task. They soon become imbedded in the sand, and hard as it is to get them afloat, it is still harder to prevent their being carried away by the swift current or washed upon the beach again, before they have been re-boomed. The logging-scow method has been the most successful thus far tried for salvaging logs lost in transit, as it possesses sufficient power to draw the logs from the beach, and facilities for securing them when afloat.

#### PHOTOGRAPHING LEAPING FISHES.

BY CHARLES F. HOLDER.

A number of years ago I began to experiment with the camera to obtain photographs of leaping fishes, but always with indifferent success. The most difficult game appeared to be the large California flying fish, *Exocetus californiensis*, which from the middle of May is a feature of the Santa Catalina channel, appearing in large schools and remaining all summer to deposit spawn in the bays of the islands. I made my first attempt from the bow of a steamer. I secured a position at the porthole in the bow, and while it was impossible to aim the kodak with any certainty I snapped it at a number of fishes, hoping accidentally to take them; but the plates invariably developed blank; the flying fish had passed out of the field before I pressed the button.

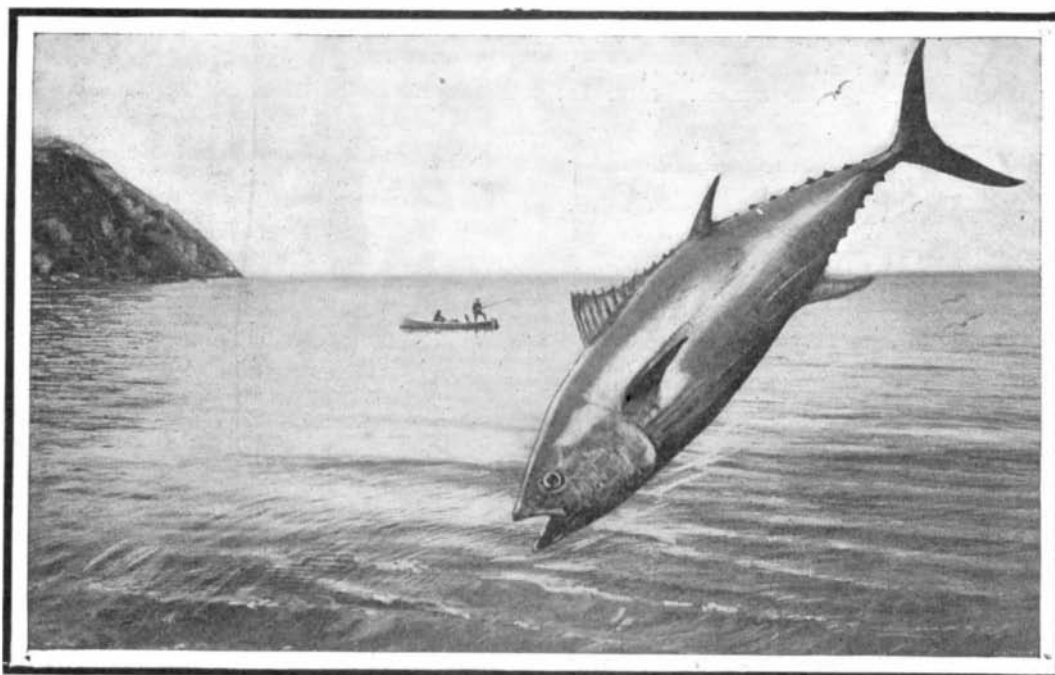
Later I made the attempt from a small launch, with more or less amusing results. I sat on an elevated deck, so that I could command the field, and held a large kodak ready for the fray. The first flying fish came directly toward the boat, passing within a short distance of me—in fact, so near that I moved to avoid it. Another flier struck the boat; and on another occasion a fish almost unbalanced me, striking my neck; but this was at dusk. In none of these attempts was I successful, for it requires some skill to face a heavy flying fish, coming like a shot, with a camera and to dodge it at the right time. I had equally unsatisfactory results in attempting to photograph the tuna.

In my attempts to photograph the tarpon I was also unsuccessful. I forced the fish to leap so close to the boat that they appeared to be coming aboard; but the sight was always so wonderful, that though I held the kodak between my knees and had formulated an elaborate plan to pass my rod to the boatman on the jump and use the kodak, it was always a failure. When the splendid fish rose into the air I forgot the camera until too late. These more or less humorous adventures have probably befallen others who, not being expert photographers, will welcome a device which experiments has demonstrated, renders it an easy matter to photograph fishes of all kinds or indeed any animal in the air. It is literally a gun camera, devised by an ardent tarpon angler, Dr. W. H. Howe, of the city of Mexico. Dr. Howe spends a part of each winter at Tampico, where the tarpon appears to winter, and as the fishes are high jumpers and were in smooth water near shore he began to experiment along various lines, resulting in a gun camera which solved the question. The splendid tarpon, the "silver king," was caught in the very act and shown in various positions in the air, making a valuable addition to the angler's store and explaining many hitherto little understood features of tarpon leaping. The appliance of Dr. Howe is made up of a gun stock and

a 4 x 5 kodak, the latter being fitted into the stock so that the shutter and opening will be on a line with the sight. The shutter is connected with the trigger by a line, or wire, and to all intents and purposes the affair is a gun and used as such from the shoulder.

sults, the tarpon being seen in every phase of leaping. With this appliance the flying fishes and tuna could be taken with comparative ease, while for birds on the wing the appliance would appear to have many advantages. The attempts to secure animals in action, especially the difficult

feat of taking fishes, have resulted in a variety of pictures not inappropriately called "false photography," in that no deception is intended, an explanation being given. This is illustrated in the accompanying photograph of a tuna. The picture is as perfect as though the fish had been caught in the beautiful leap which has made the tuna famous; but the picture is merely the clever manipulation of the photographer, and when explained and understood by the reader becomes a rational and legitimate method of illustrating. In this instance the photographer took a large plate view of a section near Avalon Bay, noted as a scene of the tuna's leaps. Then a fish was posed and photographed, this being cut out of the photograph and pasted upon the proper background by an expert who had observed hundreds of leaping tunas; then the result was photo-engraved,



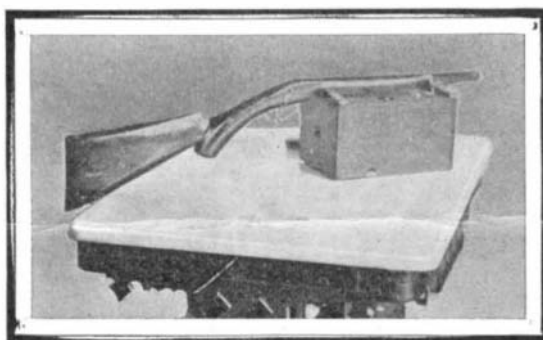
An Example of False Photography, Showing the Leaping of the Tuna.

Two pictures were used to produce this. The picture of the fish was pasted on the fishing scene and the whole re-photographed.

The pictures were taken in the angler's boat, or from a second boat, the fisherman shouting a warning at the strike, whereupon the man with the gun camera

giving a picture of a leaping fish which would be considered from nature by two-thirds of those who saw it. The picture, so far as position, height, etc., is concerned, may be said to be as natural as life, and indeed, was not modeled from memory, but from a real photograph of a tuna taken a long distance away, yet showing the exact position.

The gun camera will provide a valuable field for sportsmen and naturalists. The leap of the salmon, that of the mullet, the stupendous jumps of the whip ray, which I have observed clear remarkable distances in the Aransas region of Texas, the erratic jumping of the ten-pounder, will afford interesting subjects. The camera has entered many fields, but there are scores of forms which have yet to be taken in action. The many soaring animals, as the so-called flying lizard or draco, could be easily caught with this gun, as well as the flying squirrel in its downward rush. The bat has never been shown upon the wing, and at twilight could possibly be caught; indeed, this interesting plaything opens a new field.



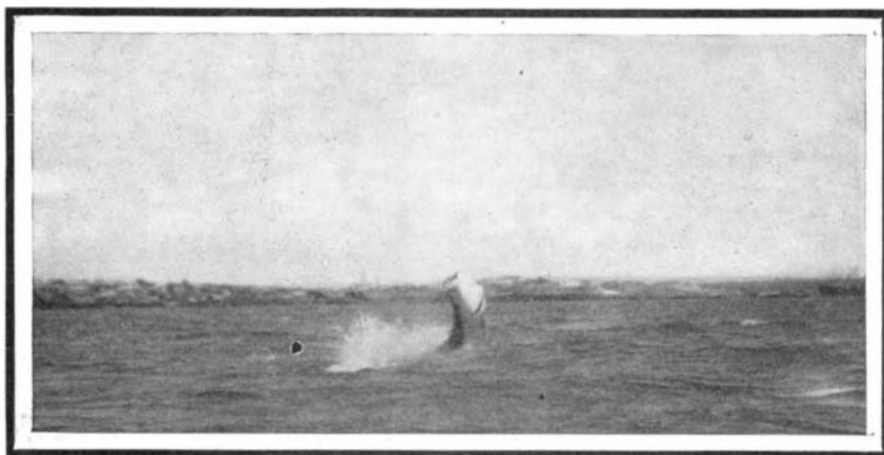
The Photographic Gun.

rose, held it in the position of ready, and as the tarpon cleared the water in its initial leap raised it to the shoulder, aimed, and pulled the trigger or shutter. Dr. Howe's films show how excellent are the re-

#### Trials of Submersible and Submarine Boats.

The French Admiralty have recently carried out, at the harbor of Cherbourg, a series of interesting experiments to test the comparative value of submersible and submarine boats. The results of these trials have incontestably demonstrated the superiority of the former type of craft. The direct objects of these relative trials have been the investigation of the question of navigation on the surface and the habitability of the vessels. The time occupied by the submersible vessel "Aigrette" for the passage from surface to submarine navigation thoroughly satisfied the commission, but the submarine "Z" was found to be much inferior. The "Aigrette" is an excellent vessel; the "Z" is badly designed.

There is a kind of coffin-box fixed on the prow containing the four torpedo tubes which, with the mechanism, make a weight of at least two tons and so burden the vessel that it dips into and plows the wave, thus losing speed. The commission has therefore decided to abandon type "Z," while the work on three units, the "Emeraude," "Rubis," and "Topaze," already begun at Cherbourg, will now probably be stopped. This decision, however, does not imply that the submarine boat is to be abandoned in favor of the submersible, since the commission is convinced that the submarine ought to be exclusively used for defensive, and the submersible for offensive tactics. It is proposed to increase the tonnage of the submersibles to approximately 400 tons, and to decrease that of the submarines to 100 tons.



Tarpon Just Emerging for a Leap.



A Leaping Tarpon Caught by the Gun Camera.