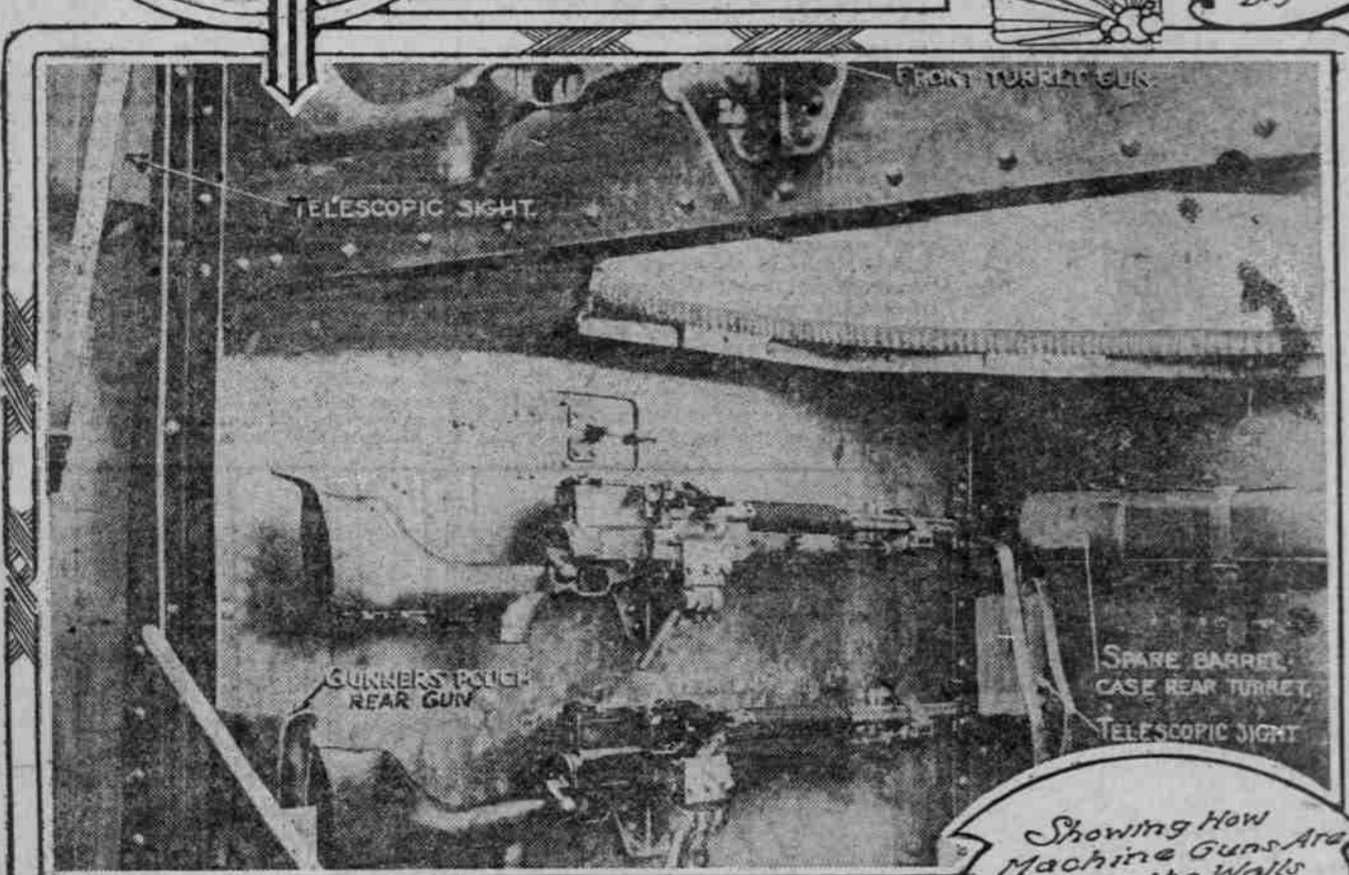
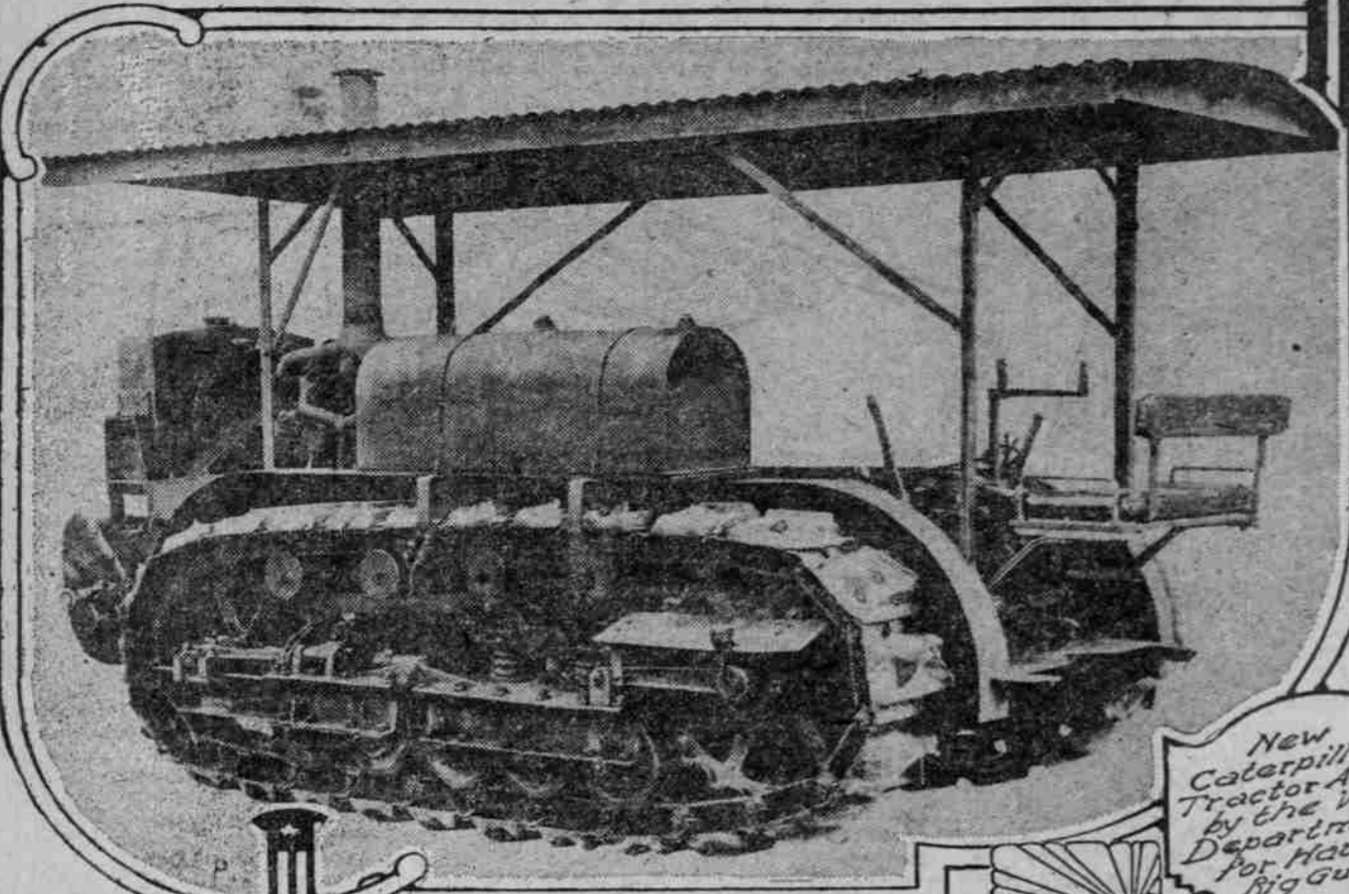


"Tank" Monsters for Our Army

War Department Considers Building Walking Forts That Have Startled Europe.



BY RENE BACHE.

WE ARE to have "tanks" of our own. War Department experts are already contemplating the construction of a few experimental ones as soon as more definite information is obtained in regard to their design.

For quite a while past our military authorities have been experimenting with caterpillar tractors of great size for dragging huge loads over territory impossible for wheeled vehicles. Now, in view of their recent adaptation for fighting purposes on the British front along the Somme, the experts are figuring on the best method of providing them with guns and armor.

Caterpillar tractors, it appears, are to be employed for transporting great guns from point to point along our sea-coasts, in places where there are no permanent fortifications. On the fortified island of Oahu, in the Hawaiian Archipelago, a regiment of "horseless artillery" (the first of its kind in the world) is to employ these contrivances in lieu of animals. But they will not be armored.

Take a big machine of this description; house it in with steel plates thick enough to be proof against rifle bullets and shrapnel, and you have just such a "walking fort" as the recent dispatches from the Somme front picture. If (as reported) each "tank" is large enough to require four tractors to carry it, the affair might well be called a "monster."

One should realize that the crawling mechanism, by which one of these vehicles progresses, is not in the least like an arrangement of wheels. It is a pair of endless belts, running the entire length of the car, and engaging with the ground by steel feet in such fashion as strongly to resemble the walking of a caterpillar.

The Germans are sure to imitate them, and before long doubtless we shall read of fights in which the "land dreadnaughts" of caterpillar pattern are engaged against one another. Meanwhile it is to the British an important advantage to be first in the field with this novel instrument of warfare—just as was the case with poison gas, when the Germans utilized it as a surprise at Ypres. Our Army officers detailed as military observers with the British forces will promptly furnish the War Department with descriptive details of the "monsters" construction, and the Ordnance Bureau will set about the business of copying them, with improvements.

The mode of locomotion employed by the tanks has a suggestion of weirdness. They are described as moving reptile-fashion—not on wheels, but as if crawling on their bellies. As a matter of fact, they do move on wheels. How else (when one comes to think of it) could they progress? But the wheels—odd though it may seem—do not touch the ground.

No imaginable wheels (as ordinarily employed) could enable a vehicle to move at will over an area torn up by

shell fire. Picture to yourself a belt of territory thrown into almost volcanic confusion, with mine craters 30 feet deep here and there, and interrupted at frequent intervals by trenches. But (as the news dispatches say) the "tank" straddles the trenches; mine craters are no obstacle to it; it knocks down and passes clean through substantial buildings in its path; it will even traverse a wood, uprooting such trees as are not broken out of the way by its weight and momentum.

It is described as "waddling along," its appearance and mode of progress suggesting a monstrous prehistoric reptile. Said indeed, might a 26-ton diplodocus or some other huge dinosaurian have moved, ages ago—a creature likewise clad in armor plates, though unprovided (unlike the new machine of war) with weapons of offense. Some observers have likened it to a gigantic toad, straddling a trench, it directs through the latter an enlaid fire, exterminating its occupants. Squatting upon a "dugout" in the path of following infantry, it deals with the underground stronghold as if it were a wasp nest, wiping out its defenders.

To complete its destructive work, it is said to employ a supplementary weapon, "of which no account (say the dispatches, censored by British authority) may yet discreetly be given." Is it possible that a hose, extruded from the "tank," is thrust into trench or dugout, emitting a stream of poison gas into the enemy's defensive refuge? No means of destroying human life seems to be too horrible to use nowadays, when science is employing all the resources of higher knowledge for this ruthless purpose.

The British Prime Minister, Mr. Asquith, gives credit for the idea of the "tanks" to Winston Churchill. Mr. Churchill is a man in whom the imaginative faculty is strongly developed; but in all likelihood, if he were questioned on the subject, he would confess that his conception had its origin in a fictional suggestion made by the ingenious novelist, H. G. Wells, who in one of his stories, gives an account of an armored land-ship so constructed as to crawl over and through the most difficult obstacles.

Jules Verne's undersea boat (fully described in a book published nearly half a century ago) is realized today, without any very essential modification, in the submarine. Now we have a later fictional suggestion reproduced in concrete and practical form by the armored engine of war that crawls over the land. Who will say that the imaginative writer has not his function as an originator of useful ideas?

This adaptation of the caterpillar tractor for war purposes, however, is a response to fighting necessity. The machine itself is an American invention. It has been used for a number of years past in Death Valley, Cal. (where, of course, there are no roads) for hauling borax. It is employed in

some of our National forests to carry heavy loads over otherwise impassable territory. Many such tractors, made in Peoria, Ill., were in the possession of the Germans at the outset of the war. They were utilized to drag the great guns that besieged and destroyed the fortresses of Liège and Namur early in the conflict. Hundreds of them were turned to valuable account by the Austrians and Germans during their invasion of Russia in 1915 to pull heavy loads of supplies over roads so deep in mud that no wheels could have accomplished the purpose.

In view of what has here been said, it will be fairly well understood what the "walking forts" newly arrived on the British front really are. House the caterpillar machine in with thick armor plates, pierce with machine guns, to defend it on all sides, and you have a formidable war car. The tractor alone, without armor, weighs 20 tons and is driven by an engine of 125 horsepower. But if (as reported) the superstructure of each tank is mounted on four such tractors, representing a total of 80 tons (not counting armor) and 500 horsepower, the new fighting apparatus is a monster indeed.

The man in armor of the middle ages was proof against attack by the weapons of the rank and file of his adversaries. In like manner the tank and file of the Germans are helpless against the armored caterpillar car, at least temporarily. But in the struggle between defense and offense in war the latter always wins in the long run, and so it may be taken for granted that an effective means of fighting the "land dreadnaughts" (if only by others like them) will soon be found.

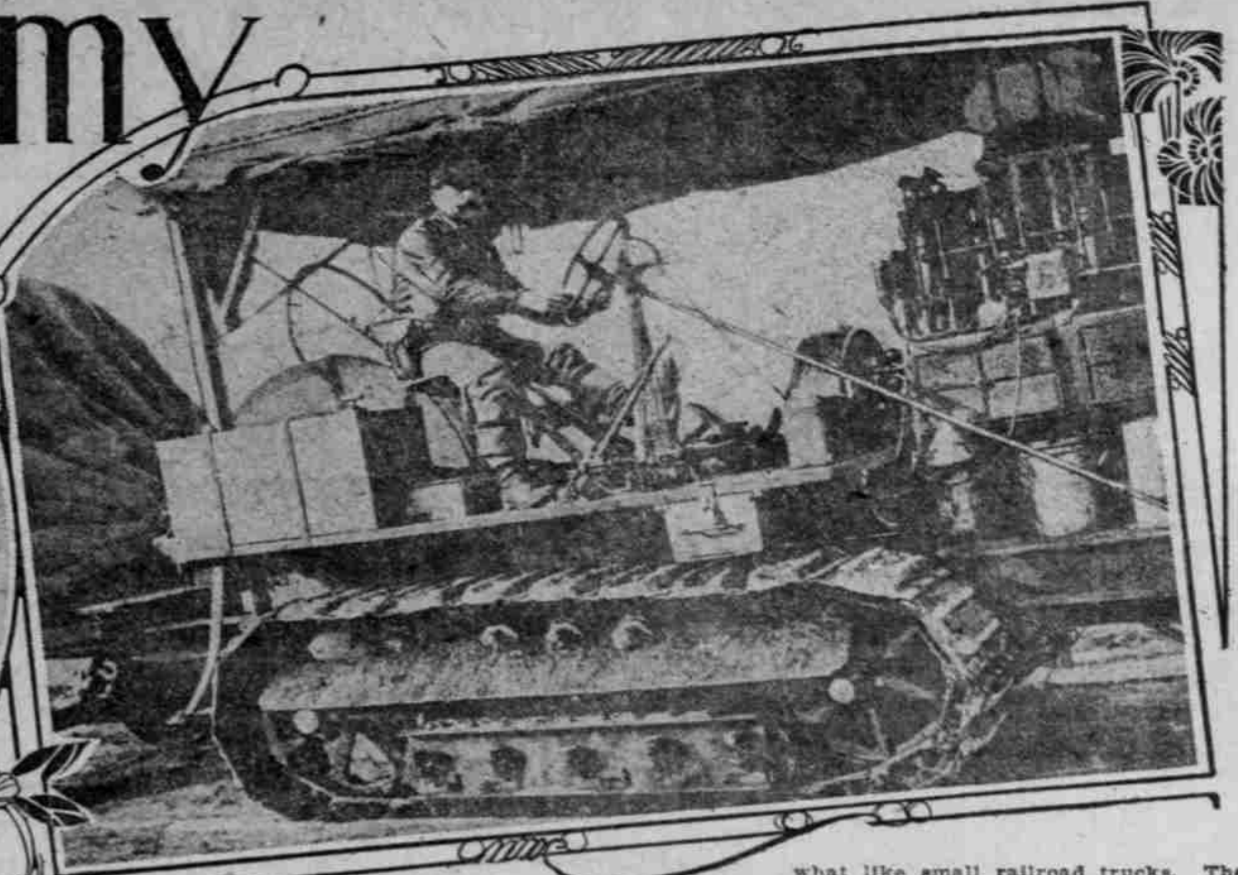
In the meantime they may accomplish much. One reads in the news dispatches of their effective use in the capture of fortified villages—walking over barricades "like elephants," crushing through the walls of houses and spitting fire while sitting on a heap of ruins. They are described as hunting out machine guns (the most dreaded engines of destruction to advancing infantry) and "smashing them under their ribs." They are even spoken of as "ambuling in" on a German battery of field guns and killing those of the gunners who had not time to run away.

"Gott in Himmel!" said the Germans. "How can we fight such things as those?" There was a suggestion of the supernatural about the armored caterpillars. Machine guns were turned loose on them, but "the bullets were only blue sparks on the armor." The walking forts are said to be proof against bombs, nothing short of a projectile from a good-sized cannon will seriously damage one of these "monsters."

They crawl along in an "uncanny" way, being able, apparently, to go ahead over almost anything. If a

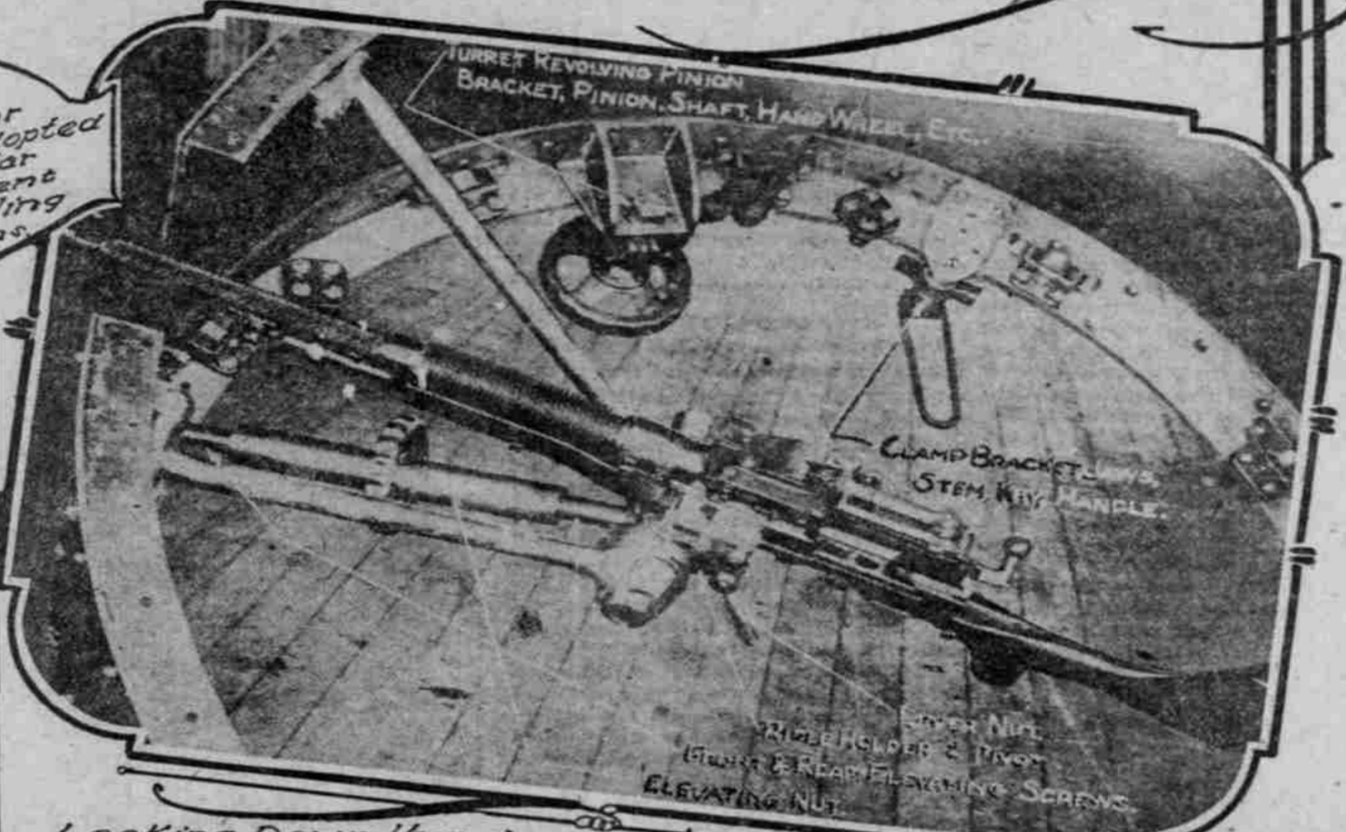


General William Crozier, Chief of Ordnance, Who Is Experimenting With Caterpillar War Cars.



Austrian Caterpillar Tractor For Heavy Freight Service in Russian Poland.

New Caterpillar Tractor Adopted by the War Department for Hauling Big Guns.



Looking Down Upon a Machine Gun, as Mounted On a Pivot in a War "Tank."

wall is in the path of one of them, it leans up against" the obstacle and opens unexpectedly, a hand is extended stone wall might be too strong to smash, but in that case the armored "dinosaur" simply climbs over it. The mechanism seems inhuman, almost supernatural; yet it captures prisoners

and treats them mercifully. "Come inside," says a mysterious voice. A cogged mechanism that lays the sections down as the tractor moves ahead and picks them up again behind, so that, as one might say, the car runs continuously on a self-laid track. The body of the car is supported by wheeled trucks some-

what like small railroad trucks. The wheels, however, never touch the ground, but run on the rail sections. Imagine a vehicle that runs on two such endless belts (in lieu of wheels), each of them being the full length of the car. Unlike wheels, the belts (being composed of short sections) are able to adapt themselves to any configuration of ground they may pass over. Owing to the length of the belts the car is able to straddle a trench; or it may in its progress waddle in and out of mine craters and other major irregularities of the terrain.

Of such character, with armor added and an armament of machine guns, is the new military engine employed by the British forces on the Somme front. It is manifestly a formidable mechanism of war, and presumably it is destined in the future to play an important part in military operations—not only in the present conflict, but in some international bickerings where we ourselves will be obliged to participate.

Service and Servility.
Chicago Tribune.

When Anthony Trollope visited the United States during the Civil War he noted, as almost all foreigners have done, the rudeness of the natives. Porters accepted his luggage with bad grace, and though they were paid what they asked for their services, courtesy did not go with them. Even conductors on the trains expressed irritation over the discharge of their duty. Other writers from foreign countries have made the same observation without the kindly analysis which Trollope ventured. He said that we were a people drunk with liberty, a land where no man dared do a service even for society without being churlish about it. Uncle Sam was wearing liberty and equality like a chip on his shoulder.

Mr. Trollope would probably find less to criticize on that score now. One may find recrudescences of this studied discourtesy in the newer parts of the country, but servility and courtesy have disassociated themselves in the minds of most of us. Perhaps business has put a premium on politeness. But whether the reason be commercial or cultural, American churlishness is vanishing.

STATE MUSEUM HERE WILL HAVE EVERY SPECIES OF OREGON BIRD



TWO CASES OF UPLAND, SHORE, WADING AND WATER BIRDS, SHOWING ACTUAL CONDITIONS UNDER WHICH THE BIRDS LIVE.

THE State Fish and Game Commission believes that a museum of natural history is one of the best educational mediums. To that belief has been added action, and already the windows of the Commission on the ground floor of the Oregon building are being filled with showcases of Oregon birds and animals.

The specimens are not merely gathered from all parts of the state and stuffed and put on exhibition at the Commission's headquarters. The habits of the bird or animal is reproduced in faithful detail, so that the school child who sees the exhibit will comprehend the conditions and environment under which that bird or animal lives.

every species of bird and animal living within the state is represented in the cases.

T. G. Pearson, executive officer of the National Association of Audubon Societies, who recently lectured in Portland, emphasized the fact that such a museum should be collected at once, for many of the species are disappearing and in a few years will perhaps be irretrievably lost.

Oregon has some of the largest bird reservations in the United States, Mr. Finley declares, and the bringing of that data to the minds of the public in a popular, as well as a scientific and educational way, will be of lasting benefit to the whole country as well as to the state.

Three Arch Rock is the largest habitat of petrel cormorants, etc., along the entire Pacific Coast.

Breeding Places Noted.
The bird colonies in Klamath and Malheur Lakes have the reputation of being among the largest breeding places in the country.

These Mr. Finley would have reproduced, so that the public school teacher could take her class to the exhibit rooms for study.

R. Bruce Horsfall, who is doing scientific research work for the Commission, has prepared the exhibits, and will continue in that capacity. He is reputed to be among the best qualified men in the United States.

Mr. Finley has contemplated other educational work for the coming Fall. He will lecture on the advantages of teachers imparting the natural history of their state to their pupils. He also has arranged to have exhibits maintained at most of the county fairs this Fall, under the direction of the State Fish and Game Commission.

Effect of Noise on Fish.
Popular Science Monthly.

Contrary to general opinion, a number of motorboats cruising about a harbor with more or less noisy engines have no appreciable effect upon the fish in nearby waters. It has long been thought, particularly by fishermen, that the presence of a noisy motorboat would drive the fish away. Exhaustive experiments recently conducted by the Bureau of Fisheries prove this theory to be incorrect. In testing the effect of motorboat noises on fish a number of young scup, known to be sensitive to sounds, were placed in a large wooden cage. The cage was fastened in quiet water at the end of a wharf and a motorboat with a very noisy engine was run at varying distances past the cage. At no time did the fishes appear to be disturbed by the noise, except when the splash from the boat hit the cage. The cage was generally would dive to the bottom of the receptacle. Another test was made with baited lines. When a number of fish had commenced to nibble at the bait a motorboat was backed up under its own power until its stern was directly over the line. The fish continued to nibble until driven off by the backwash from the propeller.