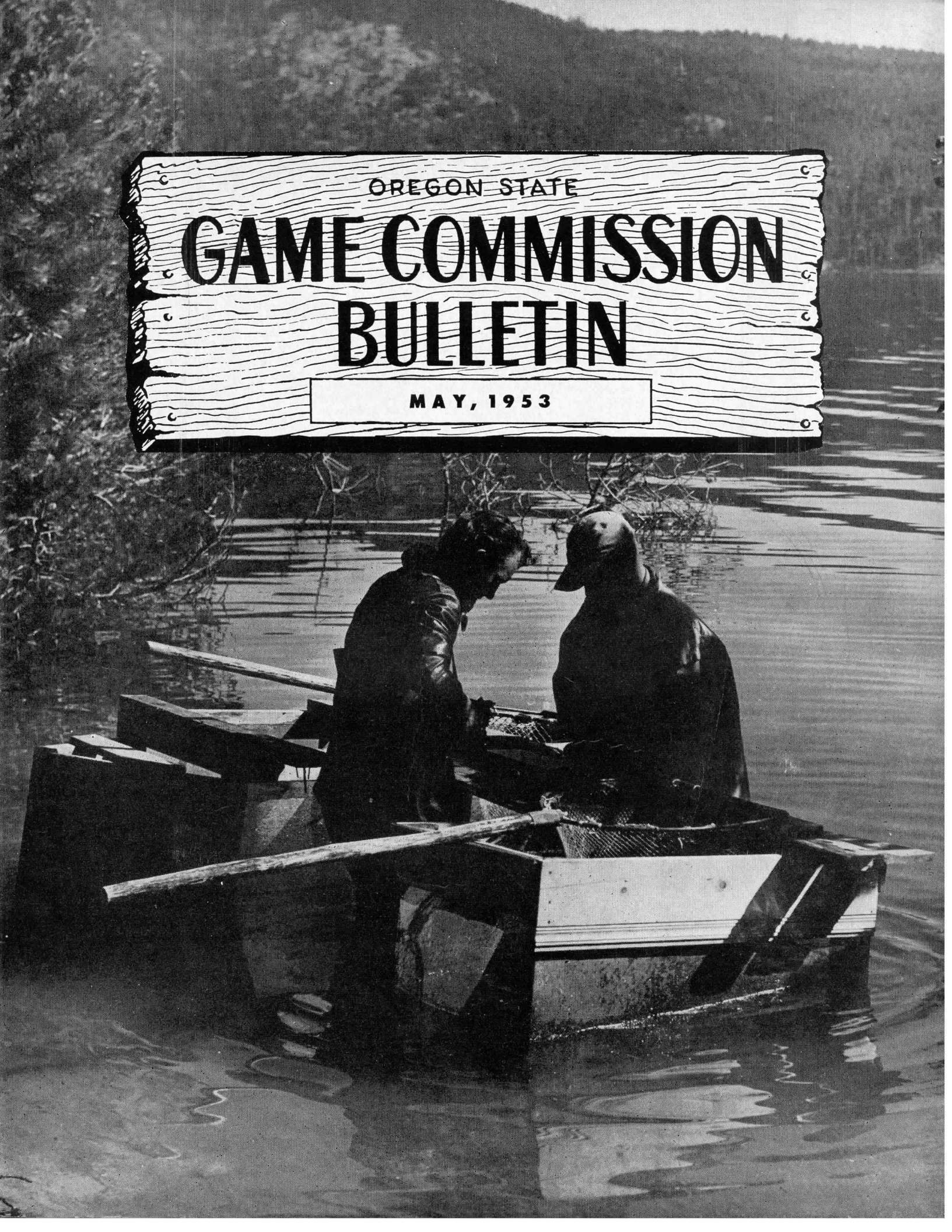

OREGON STATE

GAME COMMISSION BULLETIN

MAY, 1953

Anglers in the Mt. Hood area this season are asked to keep an eye out for rainbow trout marked with aluminum colored jaw tags. Of the 31,000 yearling rainbows stocked in Sandy, Zig Zag and Salmon rivers and Camp and Still creeks, 5,000 were tagged for the purpose of determining the extent of movement down the Sandy river from the planting area. Returns also will help determine the efficiency of the rotary fish screen installation at the Marmot dam. A fish trap has been installed in the by-pass canal from the power diversion at Marmot dam. Anglers are urged to turn in tags or tag numbers plus date and location of catch either to Game Commission headquarters in Portland or to any one of the following reporting stations: Harwood's Mt. Hood Market at Rhododendron; Brightwood Grocery at Brightwood; Blaisdell's Store at Wildwood.

* * *

As one of the experiments being conducted by the game department to increase the warm water fishery in the Willamette Valley, Peavy Arboretum pond north of Corvallis was stocked in 1950 with a number of largemouth bass fry collected from Willamette river sloughs. Recent drainage of the pond revealed that the 31-month old fish ranged between 10 and 16 inches in length. The good growth was due to the large amount of natural food in the pond.

* * *

Spring inventory in Malheur county revealed that the pheasant population is at its highest since 1947 and if the nesting season is favorable, a large surplus should be available for hunters this fall.

* * *

Plans for live-trapping and transplanting of valley quail were held up this winter by the mild weather. The birds would not concentrate or come to baited stations.

* * *

Spring shipments of 165,000 shrub and tree planting stock were made to eastern Oregon districts for improvement of game habitat. In the Willamette Valley maintenance of existing shrub plantings is underway.

COVER

Taking trout eggs at East Lake in Deschutes county. (Photo by Tom McAllister).

Oregon State Game Commission Bulletin

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MIRIAM KAUTTU
Editor

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CHANGE OF ADDRESS

Please report promptly any change of address. Send in both the old and new address with notice of change.

Nine hundred pounds of lotus major mixed with clover and grass seed were broadcast this spring on the sites of the 1952 burns on Nicolai and Elk Mountains in Clatsop county. Assistance was provided by local sportsmen and 4-H Forestry Club boys. W. F. Larson of Astoria donated 400 pounds of the seed.

April Meeting of the Game Commission

The Oregon State Game Commission met in regular session at its Portland office on April 10 and 11. Among items of business considered were the following:

In connection with the Diamond Lake rehabilitation program, a call for bids for excavation and installation of water controls at the lake was authorized. It also was decided to hold a hearing on May 8, 1953, for the purpose of considering some relaxation of the present angling regulations at Diamond Lake in view of the plan to drain the lake late in 1954 for the purpose of eradicating the trash fish.

Application was authorized for a Pittman-Robertson project for construction of a 3½ mile fence to control grazing on one of the best waterfowl nesting areas in Northern Warner Valley. The fence will enclose about 1,100 acres of public domain and 40 acres of private land in the area known as the Anderson Potholes.

Authorization was granted to exercise option from Ernest Webb to purchase for $5,000 perpetual right of way through 2½ miles of his property along the east bank of the Deschutes river near Sherar's Bridge. This will provide public access to over 20 miles of river frontage.

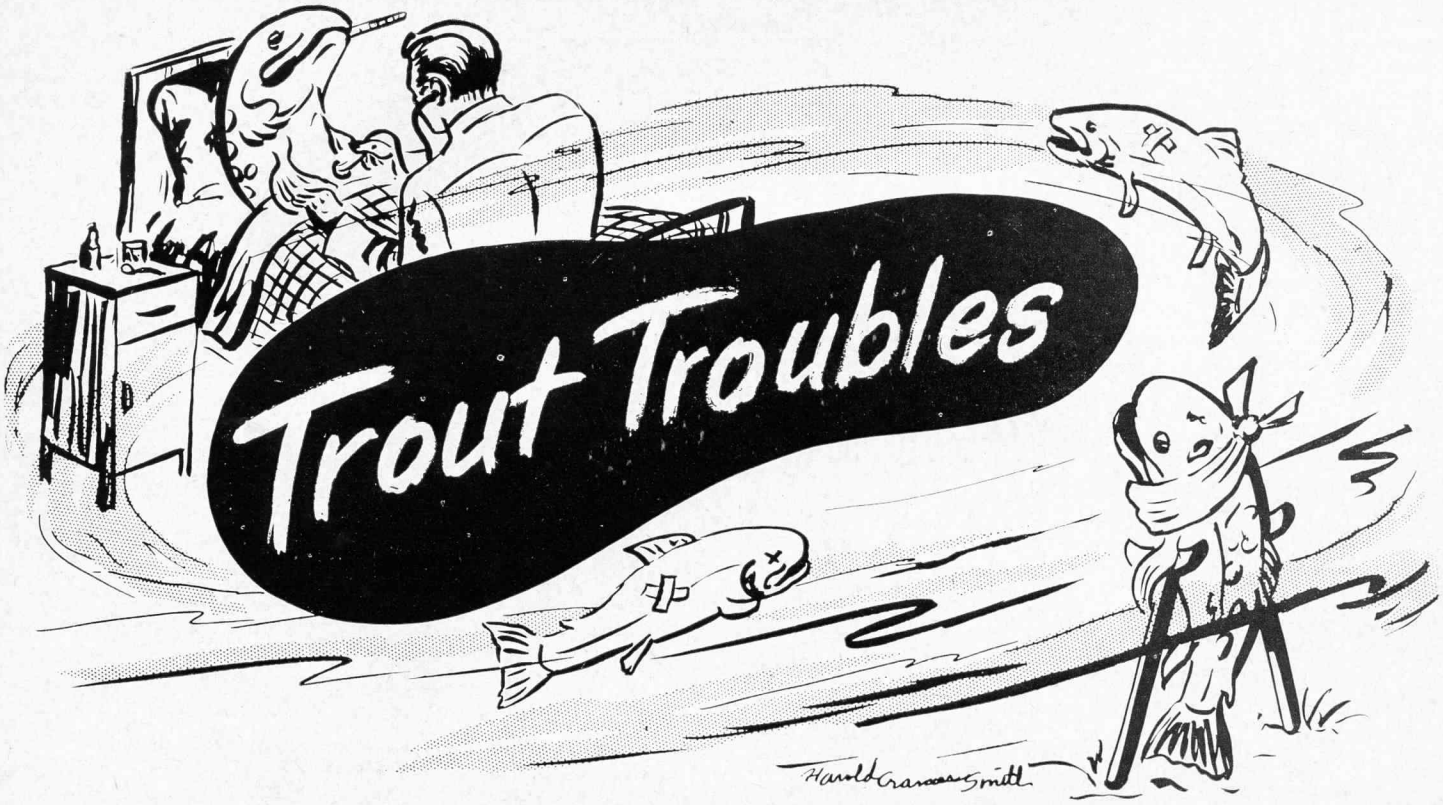
The Commission heard a delegation from the Lewis and Clark area in Clatsop county relative to elk damage and promised additional assistance in preventing damage.

Call for bids on hatchery dwellings at Bandon, Willamette, Roaring River and Wizard Falls hatcheries was authorized.

An overhead irrigation system was authorized at a cost of $1,465 for the shrub nursery operated at the Hermiston game farm for the habitat improvement division.

The staff was given authority to exercise options for three additional pieces of land within the boundaries of the Sauvies Island Management Area project, including the Jack Collins tract, Malarkey tract and Lake Farm. This will add over 1,000 acres to the management area.

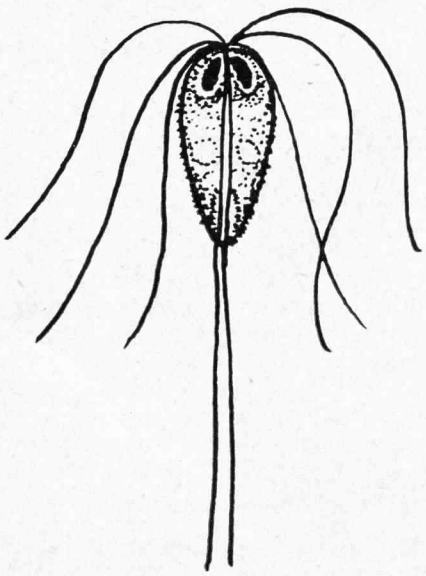
In recognition of the fact that April 11 marked the 21st anniversary of Frank B. Wire's employment with the Game Commission, first as Game Supervisor and now as Secretary, a resolution expressing the appreciation and commendation of the Commission was passed.



By C. B. WALSH, Assistant Director

There is more to raising 100,000 legal sized trout in a hatchery than feeding them every day. Of course, good food, as with people, is a basis of good health. We hear on every side today that a balanced diet is a vital necessity if we expect to bring Junior up to be a robust fisherman. The same is true of the fish; he also must have a balanced diet. True the diets are somewhat different but the principle is the same. Also, just as we struggle with Junior to get him to wash behind his ears, sanitation is a cardinal virtue of every good fish hatchery and many hours of the hatchery crew's time is spent in cleaning the ponds and sterilizing all of the equipment. In spite of all of these precautions, however, trout seem to have a bad habit of getting sick at times. This is not too surprising for even fishermen have been known to catch cold, get the measles, and have an occasional bout with the flu. Trout as yet do not seem to be addicted to getting the influenza but they have a whole series of troubles all their own and these troubles have just as imposing names as those human diseases that are discussed by the American Medical Society.

Trout diseases broadly fall into the following classes: bacterial diseases, protozoan diseases, fungus diseases and parasitic worms. Now don't get disturbed and throw away the next fish that you catch for fear he might have been raised in a fish hatchery. Quite possibly all the trout that you have ever eaten have had some type of bacteria and a few protozoans crawling around their sides. In fact, in small numbers even the injurious bacteria and the various microscopic parasites are not at all seriously detrimental to trout. It is only under crowded conditions, such as we find in our trout hatcheries today where we are raising every possible trout that space allows, that the chances are good for these diseases to reach epidemic proportions. Serious outbreaks can often be corrected with negligible loss if a correct diagnosis is made by the fish hatcheryman at the very beginning of the outbreak. This is not the easiest thing in the world to do. It is entirely different from taking little Junior down to the family doctor. Can you see a hatcheryman asking a rainbow trout to say "ah" so that he can see if there is any inflammation in his throat? Even if the hatcheryman is successful in making a diagnosis of the trouble, his treatment again in most instances is quite different from what the family doctor does for Junior. Again, can you imagine a fish hatcheryman saying to a 3-inch eastern brook trout "Roll over Oscar, I want to give you a shot of penicillin in your caudal peduncle"?



Flagellate form of *Octomitus salmonis*.

There are many good treatments known for the various diseases of trout and many of the techniques are not too difficult to apply. The bacterial diseases are the hardest to treat and at times can be quite lethal. The best known and most feared of these diseases is one known as furunculosis. It is quite common among salmon and trout in the western United States and is found at times among the wild fish

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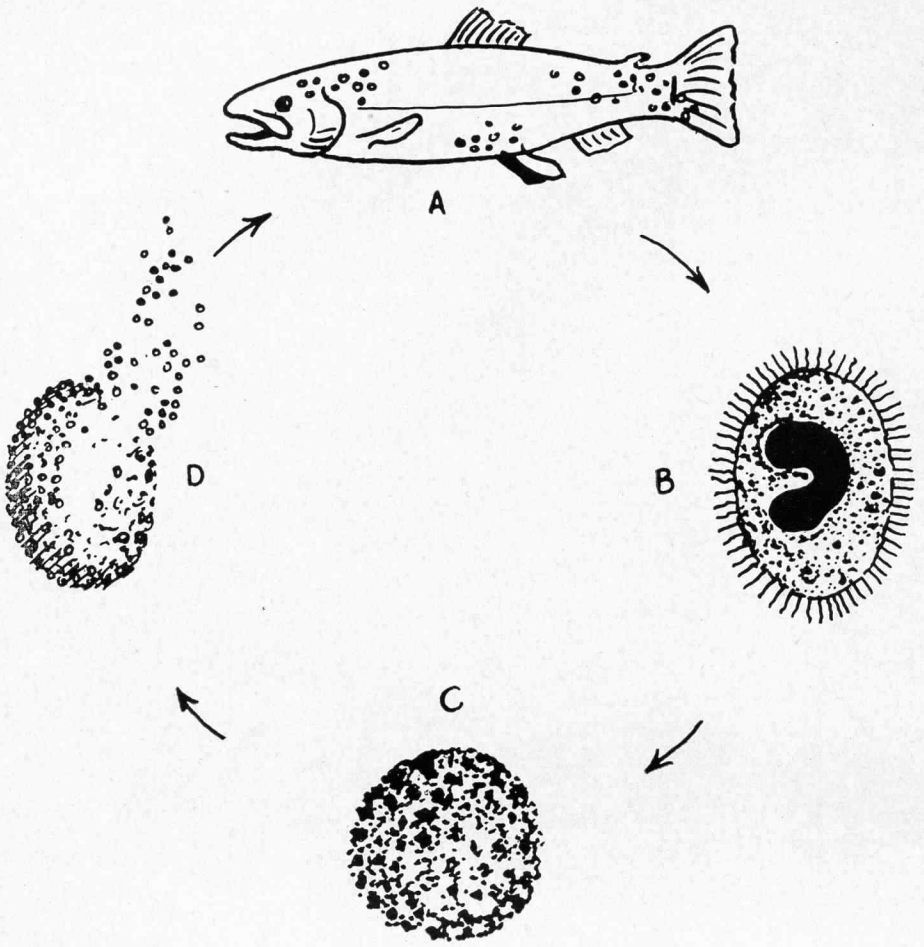

Life cycle of the *Ichthyophthirius multifilis*. A. Adult parasite on trout. B. Parasite after leaving fish as a free-swimming form and settling to the bottom. C. Division of adult into many smaller individuals after formation of cyst. D. Bursting of cyst, releasing hundreds of minute parasites, which in turn reinfect the fish.

Trout Troubles

(*Continued from Page Three*)

in the streams of Oregon. Many of the native species seem to have a certain amount of immunity to this bacterial disease but at times it has been disastrous to eastern brook and brown trout. The greatest difficulty concerning the treatment of this disease is due to the fact that the bacteria occur in the blood of the fish. Although troublesome at times, no serious outbreaks of this disease have occurred in recent years in Oregon's trout hatcheries.

The protozoans are extremely common and often cause quite a bit of trouble in the trout hatcheries. A great majority of these parasites are microscopic. A look at some of them through the microscope is more startling than the names that have been attached to them by scientists and that is quite a statement. Just try rolling some of these names off your tongue: octomitus, trichodina, chilodon, ichthyophthirius and costia. One would think that a poor costia would get an inferiority complex if he knew the little animal right next to him happily gnawing away on the same side of the trout had been given the beautiful name of ichthyophthirius.

Octomitus is an internal protozoan parasite that is usually found in the intestines. The oldest remedy for these little fellows was to feed the fish calomel in their food. In recent years, as newer drugs have been developed, more effective means of control have been discovered.

The other protozoa mentioned in this group are external parasites that spend their lives happily gnawing away on the outside of the fish. The great majority of these are free-swimming organisms and, as they multiply very rapidly and quite numerously, the youngsters swim around until they can find another trout to become attached to. This attachment, I assure you, is completely one-sided as the trout don't seem to care a bit for them. In fact if they get too thick, the trout often attempt to detach a few of them by rubbing against the side of the ponds.

The ichthyophthirius when viewed under a microscope looks like a ball containing hundreds of smaller, swirling balls. As you watch, the large ball will explode, releasing all of the small ones. The latter, in turn, soon grow to be full size parasites and explode again to start up more new colonies. These parasites, incidentally, are called "ichs" at the hatcheries as even a fish hatcheryman has difficulty pronouncing the full name which is (take a deep breath here) ichthyophthirius multifilis. In general, "ichs" are found at warmer temperatures and do not cause too much difficulty in the average trout hatchery until late in the year as temperatures rise. Most of these protozoa are treated by giving the trout chemical baths. For many years, salt was the old standby and it is still used quite extensively. Formalin solutions and glacial acetic acid solutions are also used and have proven quite effective in ridding the fish of these distasteful free-riding little passengers.

Quite probably the most shocking looking creatures found on trout are the gyrodactuylus. This fellow belongs to the family of parasitic worms. It is found most anywhere externally on the trout but is usually most abundant on the fins, especially on the dorsal fin and the tail. Under low power magnification it can be easily seen and an ugly critter he is too. At one end he is armed with a large pair of recurved hooks. He uses these to a good advantage by grabbing firmly on to the side of the trout. Surrounding these hooks is a disk shaped structure that has a whole host of small hooks on its outer margin. These also take a tight hold in the skin of the trout. This oblong transparent worm seems to wave about continually like a lost soul. Unlike nearly all other parasitic worms, "gyros"—yes, they have been nicknamed too—do not lay eggs. They give birth to living young that are well developed and waste little time in attaching themselves to a nearby trout. After these young fellows get firmly attached, they grow rather rapidly and soon you can see the young beginning to develop inside of them. These tough creatures are found in most all trout hatcheries but serious outbreaks are comparatively rare and the parasite is easily controlled, the most common

(*Continued on Page Six*)

Progress Report on Big Game Winter Range Acquisition

In recent years many questions have have been asked regarding acquisition of winter ranges for use by big game. As the hunting public has become more aware of the important part that winter ranges play in supporting big game herds, attention has been focused on management of these areas.

Several western states have made extensive purchases of critical winter range areas since the Federal Aid in Wildlife Restoration Act of 1937, which provided federal assistance for sound game restoration programs.

Most of Oregon's major big game winter ranges are composed of privately owned grazing lands and because of the wide variation in food preference of game and domestic animals, both classes of stock, if properly managed, can use these ranges without conflict or damage to the forage resources. For this reason, the Game Commission has been reluctant to initiate an aggressive winter range acquisition program. The Commission believes that, through practice of good game management and cooperation with landowners, a satisfactory big game population can be maintained on grazing lands without resorting to acquisition.

In a few areas natural winter ranges have been developed for production of cultivated crops and in these ranges even a remnant of big game would be considered incompatible with the primary land use as determined by ownership. The Commission's policy is to produce and maintain the maximum compatible number of big game animals and in pursuing this policy, it is conceivable that some big game herds would necessarily be eliminated entirely before a compatible level would be reached. In this event, the Commission has the alternative of changing the land use pattern by acquiring the problem lands and developing them for game and public use.

In December, 1950, the Commission commenced the purchase and lease of an area along the North Fork of the John Day River west of Camas Creek. Approximately 24,000 acres were included within the original project boundaries. To date 10,666 acres are under control. With the exception of 640 acres owned by the Game Commission and 840 acres subject to special use from the Forest Service, the remainder is leased from private lumber companies and individuals for a twenty year period.

The North Fork area is essential for the winter maintenance of a sizeable mule deer herd as well as some elk. Forage production is limited and past year-long grazing has left little food for big game. Winter losses of deer have been high and management of the area is essential if deer are to be produced.

A contract has been awarded for the construction of approximately 11 miles of stock-proof fencing on this project. The fence will be completed this summer and will protect a block of winter range from grazing, affording it a chance to recover. Some experimental planting of shrubs has been conducted to determine suitable species and planting methods.

The Commission has recently authorized acquisition of two other winter ranges—the White River area in Wasco county and the Wenaha area in Wallowa county.

One of the projects recently authorized includes an elk wintering range adjoining the eastern edge of the Umatilla National Forest in Wallowa county. A large herd of elk summering on the forest winter at lower elevations in the Wenaha and Eden areas near Troy. Small fields of forage and grain crops are scattered along benches throughout the winter range. A sizeable number of elk summer adjacent to the crop lands and damage is substantial. An either-sex general elk season in 1949 and a special season restricted to the damage area during the fall of 1952 failed to alleviate the problem. Continued harassment of the elk has prevented use of much natural winter range in the area, resulting in a forage problem on a restricted section of the range.

To permit full utilization of the range and avoid land use conflicts, the Commission proposes acquisition of the private lands involved. A total of approximately 19,000 acres of private land are included in the project, only 12.4 per cent of which is tillable, the remainder being grass land and cut-over timber land. Less than half of the 47 owners concerned are residents in the area. To increase the carrying capacity of the range, crop land will be reseeded to appropriate forage species. Natural barriers, supplemented with elk-proof fence, if necessary, will be employed to prevent elk use of more valuable crop lands nearby.

This proposal was presented to the

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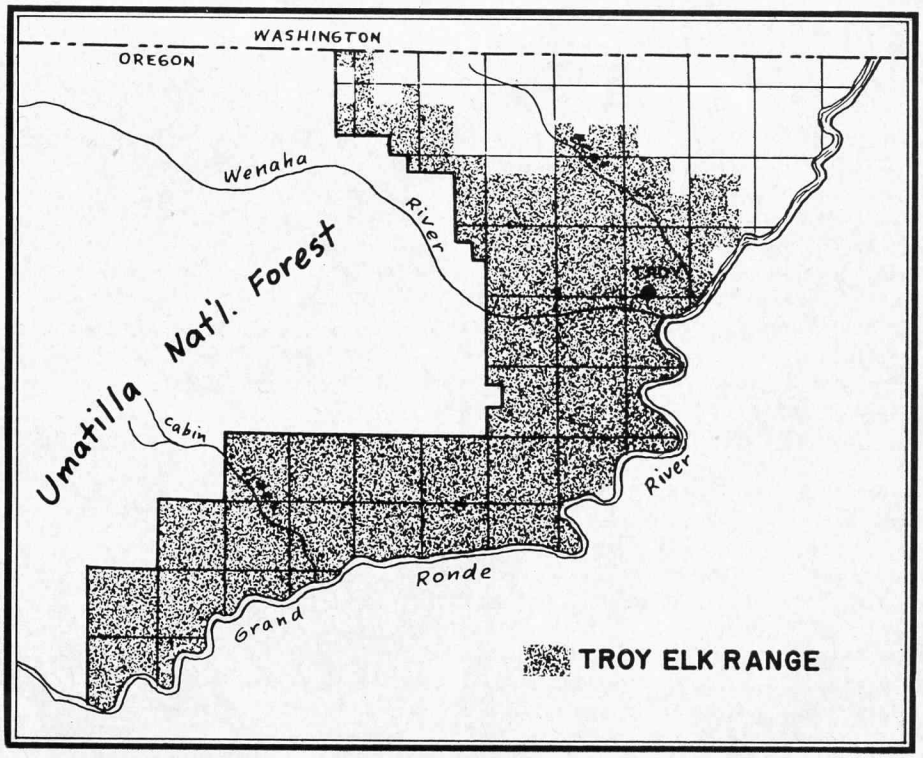


Trout Troubles

(Continued from Page Four)

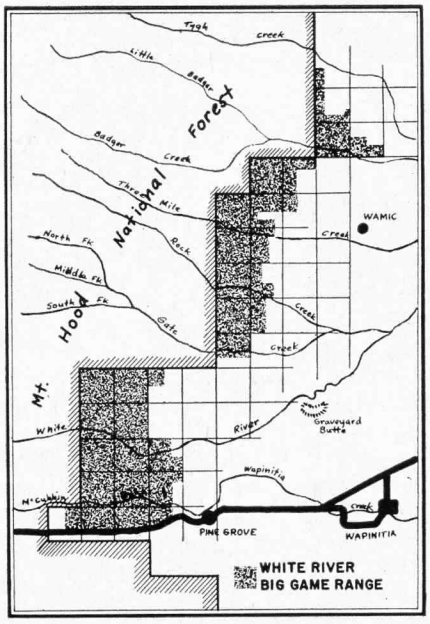
treatment being a dip in a copper sulfate solution.

One of the biggest difficulties in the treatment of trout diseases is the sterilization of ponds and equipment after the trout have been treated. This is a must so that they will not be reinfected after being placed back in the ponds. It is extremely difficult if the hatchery is operating at full capacity and a spare pond is not handy in which to place the fish that have been recently treated. The retaining of such a pond for emergencies often leads the average visitor to believe that the hatchery is not being operated at full capacity, but one vacant pond is often a good bit of life insurance in a trout hatchery.

Although we have mentioned some of the most common troubles encountered by a hatcheryman, there are many others that can cause him some sleepless nights. Anemia, for example, does attack fish just the same as it does humans and, as with humans, it is a loss of red blood corpuscles. In most instances, this is due to a diet deficiency and can usually be corrected by a change in the diet, especially with the adding of more fresh meat. Beef liver seems to be the most efficient of all of the meats for the curing of an anemic condition in trout. Goitre, or thyroid tumor, also occasionally shows up among trout. This is a comparatively simple matter to control in that the cause is so well-known and the introduction of small quantities of a solution of iodine into the food usually brings about a quick recovery.

Trout eggs also have their troubles, the most common being the attack of fungi. Constant picking of the eggs to remove the fungused ones is effective in keeping this from becoming serious. Eggs also are attacked by a disease known as "whitespot disease" and one known as "soft-shell disease." There is quite a bit of uncertainty as to the cause of the first of these diseases but it is generally attributed to an injury as it usually occurs in eggs that have been shipped for a considerable distance and have been roughly handled. The "soft-shell disease" is caused by some microscopic organism but its identity has not definitely been determined and so far it hasn't been given one of those unpronounceable names so common in fish diseases. Fortunately, this lack of knowledge has not resulted in serious results for effective control methods have been developed.

We have listed but a few of the troubles that can happen in a trout hatchery but as we said at the beginning, an ounce of prevention is worth many, many pounds of cure as far as trout diseases are concerned. Still the next time you visit a trout hatchery if you feel that the hatcheryman is wandering around with a vacant stare in his eye, just remember that he is probably wondering whether the fish in pond No. 9 have a bad case of gyrodactuylus or whether the ichthyophthirius have teamed up with the octomitus to give him a bad time for the next few days.



Progress Report on Big Game Winter Range Acquisition

(Continued from Page Five)

Wallowa County Land Use Committee on March 19 and the committee considered the project favorably.

The White River area on the east slope of Mt. Hood is important as a winter range for a large herd of blacktailed deer. Scattered tracts of agricultural lands are interspersed with cutover timber and brush lands. During the spring months, deer graze heavily on grain and forage crops, creating an acute conflict with agricultural enterprises. Three consecutive special hunting seasons employed to harvest deer involved in crop damage have been unsuccessful in alleviating the situation. Dense cover on the area makes it impossible to remove all deer by hunting. Elimination of the herd is undesirable from the public's standpoint because the range is adjacent to centers of population and provides a great deal of public use. A majority of the deer in the Mt. Hood area winter on this range.

The Commission proposes to acquire a fringe of privately owned lands adjacent to the Mt. Hood National Forest, improve the carrying capacity for deer and construct a twenty-mile deer-proof fence along the lower edge of these lands. This will provide wintering space for the existing deer herd and protect cultivated crops on the more valuable agricultural lands farther down the slope. Approximately 16,000 acres of private land involving 38 landowners will be purchased. The holdings of only four landowners will be purchased in their entirety. At present, 5.6 per cent of the area is farmed, the remainder being abandoned agricultural land, grass land, brush land, and timber land. Nearly all of the merchantable timber has been harvested in recent years.

This proposed solution to an acute land use conflict was presented to the Wasco County Land Use Committee on March 16. A favorable reaction was received. This committee later called a local public meeting of landowners involved for further discussion of the project. The project was fully explained at the public meeting and its objectives met with general approval.

The Commission's decision to acquire these two ranges is premised upon the fact that big game animals are not compatible on cultivated lands and that acquisition is the most practical solution to the land use conflicts encountered on these two ranges.

The Game Commission has no desire to become a land management agency but recognizes an obligation to protect the game resources and public interest insofar as its limited revenues will permit.

These acquisition projects are long-range programs that may require many years to complete; however, the Commission trusts that the people concerned will find these proposals acceptable and that the long period of conflict on these lands can be ended in the near future.

Fawn Pickups Unlawful

Do you know picking up any young deer can lead to arrest and fine for game law violation?

New Game Legislation

The 47th Legislative Assembly of Oregon passed a number of fish and game bills and others of related interest. A summary is presented here of those most pertinent to operations of the Game Commission.

House Bills

No. 31. Prohibits hunting or trapping in any state park.

No. 60. Regulates keeping of wild birds and wild animals in captivity. Permit from Game Commission required and issuance of permit is conditioned upon full compliance with requirements relative to care and other circumstances.

No. 127. Creates an Oregon Klamath River Commission to work with similar commission in California in formulating and submitting to legislature for approval an interstate compact relative to the distribution and use of the waters of the Klamath river.

No. 362. Permits fishing with a rod held in the hand or closely attended. Formerly, law stated rod must be held in the hand.

No. 440. Provides for a water resources committee for the purpose of making a comprehensive study of the water resources of the state. The committee shall make an evaluation of existing and contemplated needs and uses of water; a study of the existing water resources; and a study of the means and methods of conserving water resources.

Senate Bills

No. 104. Adds white catfish and Atlantic salmon to the list of game fish. These two species have recently been introduced to Oregon waters by the Game Commission.

No. 132. Amends the Multnomah-Clackamas Game Refuge to include the west bank of the Willamette River in the vicinity of the city of Oswego.

No. 144. Authorizes the Governor to close any hunting season by proclamation when excessive fire danger exists.

No. 179. Adds Squaw Lakes in Jackson county to the list of lakes on which it is unlawful to operate a motor boat in excess of 10 miles per hour.

No. 193. Amends present law relating to issuance of hunting and fishing licenses to indigents by providing that required affidavit shall be filed with local office of Game Commission in counties where such offices exist instead of with the county judge or chairman of county commissioners.

No. 217. Abolishes the White Tail Deer Game Reservation.

Wallowa Hatchery

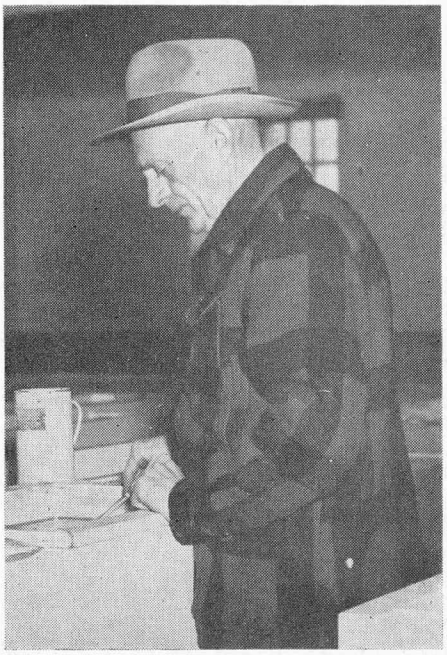
Located in the northeastern-most corner of the state, Wallowa trout hatchery nestles at the foot of towering mountain peaks forming the Little Switzerland of America. Icy cold streams flowing from these peaks form part of the water supply for the ponds, and give rise to its being called a "cold water hatchery." With water temperatures ranging between 36 and 40 degrees the growth of young trout is not as rapid as it might be in warmer waters, but this year's crop of yearling rainbow trout now measure between 7 and 11 inches and number about 5 to the pound.

Hatchery superintendent Ralph D. Kay is a long-time resident of Wallowa county, with game commission service dating from 1936 when he went to work at the Wallowa hatchery. He was later transferred to the McKenzie where he gained valuable experience under E. W. Goff, present chief of hatcheries. When World War II drew many of the younger employees into service, Ralph was assigned to fish planting activities. For two years he trucked fish all over the state, meanwhile gaining valuable insight into conditions and problems in the various hatcheries. In June, 1944, he was sent to Oak Springs hatchery, near Maupin, as assistant superintendent. His promotion to superintendent of the Wallowa hatchery came in October of that year.

Both fall and spring rainbow trout are produced at the Wallowa hatchery for release in streams and lakes of watersheds 6, 7, 8, 9, and 10, which include all or parts of Umatilla, Baker, Union, Grant, Malheur and Wallowa counties. Eastern brook trout, Montana cutthroat and lake trout are also raised for stocking in these areas.

Sometimes in the past, eggs of land - locked sockeye salmon or "yanks", as they are commonly called, were taken from the stream above Wallowa lake to be reared in the hatchery. In 1951, 350,000 of these eggs were taken. Since then, natural spawning has been so excellent that there has been no need for artificial propagation.

If present plans are carried out, Wallowa hatchery will become the first in Oregon to receive eggs of the beautiful golden trout, which will come from Wyoming. The fish are scheduled for planting this fall in upper Hurricane creek, a Wallowa river tributary which was chemically treated last summer to eliminate its former population of fish. Only waters at high elevation are suitable for golden trout if they are to retain the brilliant coloring which gives them their name. Located at the 8300 foot level, upper Hurricane creek should prove an ideal location for this trial planting.



Ralph Kay, superintendent of Wallowa hatchery.

Since brood fish are not kept at the Wallowa hatchery, eggs must be shipped in. Fall rainbow trout eggs are shipped from the Oak Springs hatchery. Spring rainbow eggs come from Montana and Idaho.

Wallowa hatchery has undergone several changes since it was first constructed back in the early 1930's. Each change has resulted in more efficient operation geared to increased demands upon its facilities. The most recent has been the remodeling of one building to provide repair shops for screen maintenance crews. Hatchery buildings now include hatching, cold storage and feed grinding rooms. Repair shop and garage are in adjoining building. The hatchery superintendent and his assistant, Harry L. Voss, occupy the two residence buildings nearby.

BEARS ARE MASSIVE, CLUMSY BEASTS, THICK LIMBED, BIG STRONGLY CLAWED NAKED SOLED FEET. THEY TAKE THE WORLD AS THEY FIND IT. INTELLEGENT, NATURALLY PLAYFUL, GOOD NATURED, BUT; TEMPERMENTAL & SOMEWHAT UNCERTAIN IN DISPOSITION.

DIFFERENCE SHOWN IN HEADS & PAWS OF BLACK BEAR & GRIZZLY. THE BLACK BEAR ADULT CLIMBS TREES AS WELL AS THE CUBS. ONLY THE GRIZZLY CUBS CAN CLIMB. BLACK BEARS ARE ALWAYS FOUND NEAR TIMBER AND WATER.

AT THE FIRST SIGN OF DANGER MOTHER CHASES THE CUBS UP A TREE. SHE IS VERY FEROCIOUS ABOUT PROTECTING HER CUBS.

Cubs born during winter, while mother is hibernating. Two cubs is rule, three or four occasionally born. Blind & naked at birth, mother nurses them about 40-45 days before their first journey into the big world.

BEARS EAT ANYTHING – Ants, Insects, Honey, Fruitberries, Roots, Lichens, Leaves, Shoots, Nuts in fall when ripe, Mice, Gophers, Fish & Carrion sometimes burying it for future meals. Bears are fond of meat, but domestic pigs & sheep are probably the only large animals they are able to capture unless the animals are young, crippled, old or sick. Bears hibernate when – "FED UP" – or fat enough. This is usually in October or November. March or April finds them active in the spring.

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