

“To encourage and extend the culture and protection of Trout and other desirable fresh-water fish in the Cape.”

THE CAPE PISCATORIAL SOCIETY

Patron:
H.E. the Governor-General,
The Rt.Hon. Sir Patrick Duncan,
G.C.M.G, K.C

Honorary Secretary,
73, St. George's Street
CAPE TOWN, SOUTH AFRICA

Circular No.33, - June 1939.

WITTE RIVER, ABOVE BAIN'S KLOOF, WELLINGTON.

The Cape Piscatorial Society has entered into an agreement with the Paradise Valley Estates (Pty) Ltd. to have the sole fishing rights in the upper Witte River valley.

Formerly, the fishing rights on this mountain block (“Oostenberg”) were conveyed to the Society in March 1934 by its President, the Hon. Mr. Justice E.F. Watermeyer, who held these rights from the owners, De Beers Consolidated Mines Ltd., Kimberly. (vide Circular No. 20, April 1934.)

During the four years of the Society's old tenure, the number of rods visiting hte Oostenberg fishery was very small, mainly on account of the difficulty of access. At that time the easiest way of approach to the mountain valley (which is over 2,000 feet above sea level) was by a hill path crossing the escarpment from a spot near the top of the Bain's Kloof road pass, where cars had to be left. This path followed the kloof of a small natural stream bed, normally dry except after rains, known as the Pombers River. In 1856 a deep narrow cutting was made through the escarpment above this kloof so that water from the Witte River could be turned into the Pombers River and thence down into the Bovenvallei, Wellington; thus breaking the natural watershed and diverting part of the Witte River flow from the Breede River system into the Berg River system. The resulting torrent was of course too steep for the ascent of fish.

In 1938, the property changed hands, being purchased by Mr. P.J. Hugo of Wellington (a Member of this Society) on behalf of the Paradise Valley Estates (Pty) Ltd. As a preliminary to their plans for water conservation, the company have constructed a new road from the highest point of the Bain's Kloof Pass running along the escarpment and penetrating for a good distance into the upper Witte River Valley. This has made access to the best parts of the fishery quite easy and cars can now be taken right up to the kloof of the First Tributary about half-a-mile past the weir of the old furrow. The property is being fenced and a Caretaker's cottage erected where the new road enters the Estates near Amandel Nek.

The work which the Society has undertaken to do in connection with the trout fishery on the Paradise Valley Estates is divisible under three headings, viz:

- (1) Productive Fishery Management, including survey and research work from a fishery standpoint, river-bed minor improvements devised for the benefit of the trout or hold good trout in pools from which they may be caught, the introduction of new stock and the control of natural predators:

- (2) Output Control, which is linked with (1) & (2), dealing with the quantity and quality of trout which may be safely removed from the fishery by angling with due regard to the future welfare of the river:
- (3) Control of Anglers, including the selection of persons who may be permitted to harvest the output, the number of anglers allowed on the fishery at any one time, supervision of methods of fishing and the conduct of angling visitors, and with measures for the benefit of anglers such as the division of the river and with measures for the benefit of anglers such as the division of the river into "beats" and the clearance of obstacles and provision of paths and indicator boards.

History of the Stock of Trout.

The upper Witte River was stocked with brown trout in the late 1890's and since then it has been one of the most characteristic brown trout fisheries in the Cape. Attempts to introduce rainbow trout to it have not succeeded; the most recent attempts being in 1932 and 1933 when 2,000 small rainbow fry were transported from the Jonkershoek Hatchery, before the Cape Piscatorial Society became interested in the fishery. It is probable that any of these small rainbows which survived the fingerling stage made their way downstream where there are rocky falls to debar ascent. There has been no record of the capture of a rainbow on the fishery during the last five years.

Brown trout have not such a roving disposition as rainbow trout. It is perhaps well that attempts to introduce rainbows did fail, as the upper valley is not considered to be suitable for rainbows for the reasons given hereafter. The policy of the Cape Piscatorial Society has been to plant only large advanced brown trout fingerlings. In February 1936, the Society transported 500 brown trout to the upper river above the weir. These fish had been hatched from very large selected ova brought to the Jonkershoek Hatchery, Stellenbosch, from the Pirie Hatchery, Kingwilliamstown, and were from a strain entirely unrelated to the local stock. In June 1939, the Society planted 300 brown trout yearlings, 4 to 5 inches long, which had been "marked" at the Hatchery by the amputation of the adipose fin.

Ecological Features & Habits of the Trout.

The Witte River on the mountain block "Oostenberg" has been fairly well surveyed from a fisheries standpoint during the last five years. The fishery occupies the self-contained mountain basin of the main stream and its tributaries and is very well watered. Six inches of rainfall were measured in the gauge at the weir during the dry period early in 1939 when the rainfall in the Wellington area amounted to only a few points. The rock formations are of Table Mountain Sandstone and the water is soft and comparatively free from vegetable colouring. Tests at midsummer, with a water temperature of 70deg.F., showed the water to be neutral (pH 7.2) with no apparent colour. After rains there is some vegetable colouring and slight acidity (similar to the conditions in the upper Eerste River and at the Jonkershoek Hatchery), but in this respect the Witte River never approaches the "peat-stained" condition of the rivers flowing from the southern dip-slopes of the same mountain-massif, notably the Palmiet River, Sonder End River and the Steenbras catchment streams. The Slanghoek Range on the east and south of the valley towers to a height of over 5,000 feet, and the Hawequas Mountains on the west are lofty and supply two of the larger permanent tributaries. The stream beds are rocky and stony, and from the nature of the terrain, angle of descent and force of the current there is little tendency to the depositing of silt.

The aquatic invertebrate fauna is typical of mountain streams and is not so rich from a trout food standpoint as that of the upland valley streams where rainbow trout thrive. It is very notable that indigenous fish are absent from the upper Witte River basin, although a few may be found below the boundaries of the Estates on Forest Department reserve in "Happy Valley". Frogs and tadpoles are very numerous. The dominant stream insects in the upper basin are dragon-flies, damsel-flies and sedge or caddis-flies. The may-fly and midge fauna is not very abundant, but tabanid "blind-flies" (with larvae developed in damp places) are only too noticeable to anglers at times.

Continual examination of the contents of the stomachs of brown trout taken from the upper Witte River has shown that caddis larvae are the most persistent food throughout the open season. The aquatic caddis larvae construct protective cases of sand-grains or of bits of vegetation or sometimes live in membranous sheaths of hardened "silk". The sand-grain cases of a species of Rhoizema, Barnard, very common in the stomachs of trout from the upper Witte River, are up to 1 ½ inches in length; and the smaller blackish membranous "elephants' tusk" caddis are equally common and can be easily seen to be very plentiful in shallow water.

The caddis cases are swallowed whole by the trout for the sake of the comparatively small "worm" which they contain. Sometimes tadpoles occur in stomachs, and in summer a fair amount of aquatic and terrestrial beetles and other large insects which have got on to the water. This food is usually rather bulky, but its greater part is of indigestible "roughage", particularly the very persistent caddis. Trout have not been found to contain masses of small nutritious insect food, such as may-fly and midge, as they do in trout streams at lower altitudes. In consequence, the brown trout of the upper Witte River valley are always rather lean, the average condition factor from data collected during the last five years being C.F.36; in comparison with the average C.F.42.5 for brown trout in the richer water of the upper Berg River system.

Rainbow trout consume more food than brown trout were successfully planted in this fishery, it is likely that from their more prolific breeding ability they would tend to become too numerous to have ample room for foraging and good growth, and that the stock would become small and poor and be of little interest to anglers. This has happened in the case of several upper waters in the Cape, notably the Eerste River above Jonkershoek and the Kleinberg River above Tulbagh, where numerous small rainbow trout can be caught almost all under the legal size. In such cases however the upper waters are nurseries for the lower reaches of the rivers, a positive which would not be acceptable on the upper Witte River fishery.

On the other hand the present stock of brown trout in the upper Witte River has arrived at an ecological balance suited to the environment, and at the same time being of distinct interest to anglers. For many years the fishery has carried out a stock of fish of quite good average size, and it is not unusual to take half-a-dozen ranging from ¾-lb to 1½-lb and sometimes larger. During the 1935, 1936, 1937 and 1938 seasons a number of brown trout from 2 to 2½-lb were recorded, and the largest measuring 19¾ inches long was not weighed, but on C.F.36 would have been 2¾-lb. But it must be remembered that the river has been very lightly fished on the whole, owing to the difficulty of reaching the best places.

Brown trout are not such prolific breeders as rainbows, but undoubtedly they do breed in moderate numbers on the good gravel beds in the upper Witte River basin. Young fish of the year can always be found, and on some evenings the large pools have been seen "boiling" with the rising of two-year-olds. The natural increase has sufficed to maintain a stock of fair-sized brown trout in the favoured pools, sufficient that is in relation to the modest amount of angling which has been done in past seasons. In

face of certain adverse reports, it may be mentioned that the brown trout in this valley are extremely wary, and unless the pools are approached with great caution the fish are scared and take cover before the angler can get into a favourable position to cast or observe its inhabitants. This fact probably has led to the belief that there are fewer trout on the fishery than is really the case.

Frequent visits to the fishery during the last five years and very careful search, including days spent more in counting the trout population than in actual fishing, have revealed that all the best places carry a good stock of fair-sized brown trout. Trout are very intolerant of their own kind and they are not at all sociable or shoaling fish under natural conditions. Every large trout requires a safe hiding place with a good depth of permanent water, coupled with a roomy foraging area to itself. It will drive away other trout from its chosen habitat, and naturally the smaller or weaker fish have to give way. When a larger trout is taken from a good place, another will soon take advantage of the vacancy created to better itself.

In a mountain river like the Witte, where the greater part of the bed consists of rocky runs liable to shrink in size and become shallow in summer, the number of naturally good holding places for large trout is very limited. Their sum is a very small part of the total area of river water; and for the reasons stated above, the number of large trout occupying any particular pool is also limited by the habits of the trout themselves.

There are many intervening shallow runs and minor holding places, often almost unfishable by the angler, which serve as nurseries and juvenile haunts for the lesser trout. The stock of young and small trout in such places has not been noted to be unduly large, but it must constitute a good reserve and it has been sufficient under previous circumstances in the upper valley. If the river is to be more regularly fished in future, on account of its vastly improved accessibility, the stocking of the runs with reared brown trout fingerlings brought from the Hatchery would assist in maintaining this reserve of growing fish. There is a great difference in the survival potentiality of an egg, and alevin or even a small fry compared with that of an advanced trout fingerling or a yearling. The natural loss of fry in a river is rather large, but an advanced fingerling has grown past many of the hazards of youth. As previously indicated, it is proposed in future to mark all Hatchery fingerlings by the amputation of the adipose fin, to give some indication of the actual success of this method.

As a logical outcome of the above discussion, it is suggested that more good holding pools will mean more fair-sized trout and a general extension of the production of the fishery.

The construction of water conservation dams would provide a greatly increased trout-feeding and angling area. It is also likely that the trout food in artificial lakes formed in the course of the river would undergo a considerable change, and become much richer, owing to the deposits of organic silt which would be laid down promoting the growth of small, nutritious food items (such as may-flies, midges, gnats and crustacean) which are at present almost absent from the fishery.

But apart from such larger developments, minor improvements on the main river and its tributaries could be carried out at small expense to increase the trout-holding capacity. This may apply more to the tributaries, which are less subjected to winter floods. In the case of the Second Tributary (entering from the side valley from the Hawequas Mountains, just before Suikerbossie Hoek), the construction of small dams and current deflectors would affect great alterations and make this one of the most interesting dry-fly streams at the Cape. The lower half-mile of this tributary consists almost entirely of straight gravel runs, very heavily bushed, scoured through deep alluvial soil. It holds a remarkable stock of trout,

but at present it is only fishable at all in a very few places, where rocks have caused deflections of the current or the natural "digging" of flat pools. Higher up it is rocky and so heavily bushed that the pools are hard to find without some openings and indicators, although the side valley has a good open herds' path. There are few streams which call so loudly for the application of stream-improvement methods, as its water is very permanent and many degrees cooler than the main stream in summer and it is not subject to extreme floods. It has fine spawning redds of gravel and nurseries for fry and growing trout, but the annual taking of more of the larger trout from it in summer would not be prejudicial to the rising generation of fish, rather the reverse.

The main stream and tributaries at present provide some five miles of river frontage with comparatively few recognised fishing places, but quite a moderate amount of fishery development work would much improve this position.

A. CECIL HARRISON,

Hon. Secretary

Circular No. 33

June 1939