

THE INTRODUCTION OF THE AMERICAN BROOK TROUT

(Salvelinus fontinalis) TO KENYA.

by HUGH COPLEY.

THE American Brook Trout (*Salvelinus fontinalis*) is the North American representative of the British Char, such as the Windermere Char (*Salvelinus willoughbii*). Really all chars can be considered as varieties of the Alpine char (*Salvelinus alpinus*). The chars can be distinguished from the Brown and rainbow trout by their coloration. The back is dark green becoming lighter on the side, to white on the belly, often flushed with pale pink or yellow. The back is covered with a marbling of short black lines, with sinuous lines of black, or rings on the dorsal fin, while the upper and lower caudal is barred. When swimming the conspicuous white line with a black base is seen on the forward edge of the ventral and anal fins. When ready for spawning the lower parts of the cocks are bright crimson. If identification should be still in doubt, an examination of the vomer bone in the mouth, will settle the question. In the trouts the vomer bone, often called the ploughshare bone, is completely covered with well developed teeth. This bone in the char is broader, shorter and only carries teeth at the end nearest the throat.

The reason for the introduction of this fish was as follows: There are in Kenya quite a number of farm dams situated from 7000 to 9000 feet above sea level which are rain fed, or fed by a small stream only running for a few months in the year. The water in these dams is far too cold to support a population of Tilapias. Also, since they have no access to gravel spawning grounds, trout in such dams will grow but will not spawn, often dying off when spawn-bound. In an article in a Swedish paper it was stated that in a number of lakes in Sweden char would spawn on the muddy side and the ova would survive and keep the lake stocked. Such a fish was just the answer to our problems, so we immediately got into touch with D. F. Leney Esq., of the Surrey Trout Farm, Haslemere, enquiring whether any eyed ova could be procured. Finally some American Char were found at the Wraymires Hatchery of the British Freshwater Research Station, Windermere. We were promised 2000 of these ova when the fish were stripped, if we would make all arrangements for getting them out. Mr. Leney took over all that part of the work, and the eyed ova came out to Kenya with the usual consignment of Brown and Rainbow ova in January 1949. They were hatched out in a Kashmire box, and by the time the Hatchery Superintendant arrived in March we had 1,731 fingerlings for him to look after. It was noticeable that these fingerlings would not take boiled egg yolk or fish, like the brown and rainbow fingerling; but would only take liver. We had a disaster in April when we lost 648 fingerlings choked by silt carried down by the river. At the end of December, 1949, we had 100 fish in the rearing ponds. We found the American char a far more delicate fish to raise than either brown or rainbow trout.

During 1949 we moved 151 American char to three stations for experimental purposes. Mr. Morson let us stock his dam at Ol Joro Orok with 44 fingerlings, and Mr. Baxendale lent us one of his dams, and this was stocked with seven fish on the 14th December, 1949. The main experiment, however, was made in Lake Hohnel at 14,000 ft. on Mount Kenya. If they did survive and produce stock, the idea was to stock all the high altitude rivers and tarns on Mount Kenya ready for the time when this area would be declared a national Park.

On the 1st of September, 1949, the Hatchery Superintendent, Mr. Martindale, started off with ten debes each containing ten American char 3" long; two debes to a mule. The highest limit of the bamboos was reached at 14.30 hrs. and the debes were off loaded and placed in a mountain stream. After the water had been equalised, the fish were placed in two holding baskets, and left there for the night. The temperature of the stream water was 51°F. The following morning the fish were replaced in the debes, and Lake Hohnel was reached at 17.30 hours on the 2nd September, and 99 fish out of the 100 were safely released in the waters of the lake, which had a temperature of 51°F. On the morning of the 3rd September two fish were seen feeding happily in the shallows. The lake was closed to all fishing.

The 100 fish left in the rearing ponds at the Research Station grew well, just as well as the Shasta rainbows. On the 13th July, 1950, two females were found to be ripe and were stripped. This early ripening of the hens was a surprise, as the brown and rainbow trout of the same age would not ripen until their second year. In England and America these fish do not ripen until their third or fourth year. In all seven fish were stripped, yielding 242 fry in December, which were moved to the rearing ponds. All fish gave good ova in small quantities; but the cock fish gave very little milt.

In 1951 the great majority of the hens were spawn-bound, and only two hens gave a few ova each. The cocks also gave very little milt. We have a very few fingerlings left. Our experience is the same as that of German hatcheries — the first stripping is successful but subsequent strippings are of very little value.

On the 27th September, 1952, the Hatchery Superintendent went up to Lake Hohnel to see what was doing there. Although he could not catch a fish, yet he saw about five large fish rising. He saw no small fish nor any signs of spawning; but he found a dead hen fish, approximately 2½ lbs. in weight, which had died owing to becoming spawn bound.

It can safely be said that the results of this importation are a failure owing to some defect in the environment. Dr. V. van Someren is of the opinion that the relative hours of light and darkness are wrong; i.e. that the fish get no winter periods, with short hours of day-light coupled with too high a water temperature. This failure is a great pity, as the American char is a bold, handsome fish, which would have filled an empty niche in the sporting fish of this Colony.