

Trout in SA: A case for genetic studies

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The first successful consignment of trout to reach the Cape was in 1892 when brown trout ova were hatched at Anneberg brewery in Newlands (*Piscator* no.97). Soon after this, several imports of ova occurred and trout were stocked throughout South Africa from the Liesbeek in the south to the northern parts of the Drakensberg. Over time these trout populations became more isolated due to man's activities and today wild trout populations are restricted to the upper alpine sections of rivers and streams. As early as the 1940s writers in *Piscator* such as Lawrie Kingma noticed that rivers such as the Eerste and Berg had become polluted and silted and that trout had been forced to move to the upper reaches.

As these populations became more isolated the chances of genetic variation increased and could lead to a situation where trout in one stream may show genetic differences to a population in another stream. As an example, the brown trout of the Keurbooms River system near Plettenberg Bay are very isolated as there are no other rivers in that region with trout. They show, I believe, strong signs of sexual dimorphism with males being much darker than females. These differences are not always apparent in other brown trout populations. A similar example is the male rainbows of the Spekboom River in the Transvaal. Here the male fish seem to remain in breeding colouration throughout the year and have thus been called Spekboom River reds. These features presumably evolved after the original introductions.

The evolutionary pressures on trout in South Africa would vary substantially to those encountered in Europe or the northern hemisphere with summer temperatures, greater predation and higher breeding temperatures being critical to a population's success. I believe interesting genetic tests could be done to see if significant genetic variation occurs among South African trout populations and whether these results are significant in relation to the original trout introduced. Is it possible that South Africa has the world's most diverse rainbow and brown trout populations?

I have fished the Keurbooms River and its tributaries since the 1980s. Brown trout are the only trout species to have formed a permanent breeding population in that system. Martin Davies of the JLB Smith Department of Ichthyology at Rhodes University believes they were introduced about a century ago but does not have a specific reference. I have looked through the library at JLB Smith and have perused old CPS journals but could only find a reference to streams close to Humansdorp being stocked with ova from Pirie in about 1902.

The upper Keurbooms River would have been very remote in those days and thus ova may have been shipped to Knysna and then transported to the upper Keurbooms, but I cannot find a reference to the initial stocking. The Keurbooms stream becomes warm in midsummer and to survive I believe the brown trout migrate up the cooler tributaries until more favourable conditions return. This may explain why the minnow population in the Keurbooms system is strong, as the trout are not resident in the main stream throughout the year.



Leonard Flemming fishing the evening rise on the Kwaai. Photo by Billy de Jong.

Editor's note: Former CPS chairman, Gerard Barnardt wrote: "I know the Keurbooms very well and have often fished it in the past. I have also fished its tributary, the Kwaai River, which joins the Keurbooms at Prince Alfred Pass at De Vlugt. This is also the home of the Plett Mountain Trout hatchery which regularly stocked the river. The old farm also had two stuffed brown trout (probably around 7lbs each) that were caught in the river. This begs the question: How does such a relatively small river sustain such big fish? One day we caught mullet in one of the pools below the farm, and the possibility exists that these big trout could have been hunting mullet migrating upstream from the Keurbooms."