

THE OLIFANTS/DOORN RIVER SYSTEM AND ITS FISHES

By A. CECIL HARRISON



Olifants River Yellowfish, weighing 13½ lb., taken with a bass rod and plug, played for fifty minutes.

(Photo: D. Roth)

THE Clanwilliam Olifants River offers anglers today some of the finest freshwater fishing in the Western Cape. Yellowfish still abound and the smallmouth bass population is surely one of the best in any river in South Africa.

In other respects, have conditions changed materially in the last 25 years? The following notes are put on record so that anglers may judge for themselves.

Large collections of indigenous fish were made in the Olifants River in 1937 and 1938 to "beat the bass", which were on the increase, as it was feared that some of the smaller species, then so plentiful, might be lost to science with the spread of exotic predators.

The attention of this Society was drawn to the great possibilities of the fishing in this river system by a foundation member, the late A. E. Manley of Klaver.

Manley was an expert trout angler, schooled in the Eastern Cape during its palmyest period. He was in the public service and had been stationed at various good trout centres. In 1910 he reported through the Resident Magistrate, Maclear, and again in November 1911 as secretary of the newly-formed Maclear Angling Society, on the illegal fishing methods which were rife in the district. In 1918 he was secretary of the Mount Currie Angling Society, Kokstad.

He was a member of the Western Districts Game and Trout Protection Association, Cape Town, and used his influence in the negotiations which led to the transfer of the records and funds of that moribund body to the Cape Piscatorial Society in 1938. Manley was a staunch supporter of our Society and its objects, and it was a great loss to us when his death occurred in September 1938 whilst he was stationed at Klaver with the Irrigation Department. In every way he was a lovable character.

A. E. Manley was responsible for the introduction of largemouth bass yearlings to the Bulshoek Dam on the Olifants River in 1933, in conjunction with his friend F. G. Chaplin at Jonkershoek.

FEATURES OF THE OLIFANTS / DOORN SYSTEM

The Olifants/Doorn is the largest river system draining to the Atlantic south of the Orange River. Clanwilliam is the principal town on the banks of the Olifants River, which should not be confused with a river of the same name in the Oudtshoorn district in the Gouritz river system, or with another in the Northern Transvaal in the Limpopo river system.

The Doorn River and its northern and eastern tributaries collect flood water—when there is such a surplus—from a vast area in Namaqualand and the edge of the Karroo, and some of the northern tributaries are contiguous with feeders of the Orange river system flowing northward. Eastern tributaries are near to feeders of the Gouritz river system flowing to the Indian Ocean. These are mainly flood channels, but such contiguity may have had bearing on the distribution of indigenous fish in the past.

Other feeders of this river system come from mountain ranges in the winter rainfall area of the Western Cape. Some are in the Groot river sub-system flowing to the Doorn River from the Cold Bokkeveld area, such as the Kruis, Houtenberg, Winkelhaaks, Leeu, Twee and Onderplaas. They contain indigenous fish, surviving in rocky pools when the flow abates in summer. Some streams in the Doorn system flow from the Cedarberg and Krakadouw ranges, such as the Breekkrans, Krom, Matjes, Tra Tra and Bidouw, the headwaters of which either hold some trout or have been thought to be suitable for trout at various times.

The Upper Olifants River

From its upper sources in the Witzenberg range, about 12 miles north of Ceres, the Olifants River flows almost due north for a distance of 105 miles to Klaver, and then by another circuitous 50 miles to its estuary.

On the Witzenberg plateau the main river may be said to originate about two miles to the north of the old Witzenberg pack pass to Tulbagh, but streams flowing to the Breede river system are passed on the way. Indeed, in the centre of the plateau, at an altitude of about 3,000 feet, storm-water courses leading to the opposite river systems are in close association and almost indistinguishable; those flowing to the south going to the Ceres Dwars River (Breede system) and those flowing to the north to the Olifants system. It is interesting to note, however, that except for the small "mountain minnow" *Galaxias zebratus*, each river system has a distinct fish fauna. Towards the northern end of the plateau streams from the Schurfteberg, or eastern side (Hansiesberg, 6048 feet) are included in the main Olifants system. The Witzenberg plateau is reached from Ceres by way of the Gydo Pass and the Schurfteberg Pass near the summit of the former.

In March 1938, when the upper river was surveyed by Dr. K. H. Barnard and C. W. Thorne of the South African Museum and A.C.H., the stream on the last two or three miles of the plateau above the ravine was very low and the water tepid. The bed was cut through light soil and gravel, and grown in places with palmiet rush, scirpus and wateruintjies (*Aponogeton*), but the banks of alluvium showed signs of deep erosion and washaways in times of flood. It is understood that since then there has been much heavier erosion from farming developments on the plateau. The clear water from the small hill streams, although free from peat stain, was very acid, pH 4.5 to 5, probably on account of its passage through beds of sphagnum moss. The water of the main river was clear and neutral, about pH 7.00.

The upper Olifants River was once famous for numerous brown trout—introduced in 1895, but even in 1938 the stock had fallen off from the early plentitude, and the river had deteriorated from the diversion of its flow for irrigation.

Where the plateau country ends, the river makes a wide bend and flows almost west in a gentle descent for about a mile as it breaks through the sandstone to the head of the long ravine, where it turns sharply and resumes its northern flow. At this point the first good stream from the Great Winterhoek mountains joins the river, a good torrent even in late summer and typical of many from the gorges to the ravine. With every mile of descent the water conditions improve as the mountain streams add to the volume of flow.

About four miles downstream from the head of the main ravine below the plateau, the foothill country broadens and the river curves to the right into a deeper cutting; but soon the valley narrows again and the river is confined to deep clefts in the sandstone, mere slits between sheer rock faces containing cascades and tanks of still water, which would be foaming cataracts in flood—the "Centre Canyon", a famous show place. For about quarter of a mile from where it emerges from this canyon, the river in 1938 opened up to a fine series of pools and weedy glides on a clean stony bed (since subject to erosive silting) and then flowed into the "Visgat" pool. (See *Journal of the Mountain Club of S.A.*, No. 40, 1937, "Centre Canyon and Visgat", by F. Berrisford.)

The "S"-shaped Visgat pool was about a hundred yards long in 1938, cleaving two sandstone koppies so cleanly that the rock ledges at the water's edge were but 60 yards apart. It was, apparently, a natural site for a dam, and discarded survey forms lying about the spot suggested that investigations had been made. Below the outlet of the pool, the water cascades into a narrow canyon with the milled potholes so typical of the Olifants ravines, the rock surfaces polished to the smoothness of marble by the tremendous water power. Fishing and careful scrutiny of the water failed to reveal any fish at all in the Visgat pool. This would not be surprising in the case of brown trout under bright, hot conditions, but shoals of small indigenous fish would have been visible if present. There are certainly no indigenous *Barbus* and *Labeo* in the upper Olifants River above the series of barrier falls in the canyons, although yellowfish are plentiful lower down in the ravine.

The trek path from Visgat to Drostergat, about four miles downstream opposite Upper Bosch Kloof, takes a route high above the bed of the river on account of the acute slope and roughness of the ravine. The main river can be reached from the eastern bank from the vicinity of De Keur on the Cold Bokkeveld road and that down to the Onderboskloof tributary. The ten miles of the lower ravine from Drostergat, between the "Groen" and "Graskop" peaks, was followed down by Maurice Hallack and Servie le Roux in September 1937, and they found the going very difficult on the western bank (*Journal of the Mountain Club*). Godfrey Hoehn, in *PISCATOR* No. 11, September 1949, page 93, mentioned a strong unnamed stream flowing from behind the Groen peak (5,468 feet) to the Olifants ravine, its source very close to that of the Twenty-four Rivers (Berg river system), and that it had several falls in the lower reaches.

Keerom

In March 1938, the Olifants was examined at the head of the Citrusdal valley and in the lower part of the ravine where the river has cut its way through the Cold Bokkeveld range. Two inches of rain had fallen on the previous day, but the water was not discoloured to any extent and normal summer level was resumed in the next two days.

The late T. Mörch-Olsen of Citrusdal, then the owner of the farm "Keerom", kindly co-operated in every way and supplied a boat and a beautifully-made wooden "otter" for experimental purposes. This paravane device was towed to run in the large Keerom pool, armed, after much preparation, with numerous trout flies on droppers, but caught only a few sawfins, *Barbus serra*! The two streams on the eastern bank

from the Cold Bokkeveld range, Karnemelksvlei and Theerivier, were inspected, and might possibly support trout. Keerom is a mile or two further up the valley from P.O. Grootkuil.

The approximate point of the break-through of the river is about 5 miles south of P.O. Grootkuil. The bed at the foot of the ravine was heavily bushed and difficult to explore. The river emerged into a beautiful swirling pool, set in an amphitheatre of turreted rocks, and at the tail of the pool there were large deposits of clean white sand and a channel of deep water. The river then ran for about half a mile in glides over clean, brown gravel and stony rapids, confined between banks grown with palmiet rush and bushes. This section held large shoals of yellowfish, which could be caught from occasional gaps on fly or spoon. The final rapid rushed into a deep eddying cauldron at the head of the long Keerom pool.

The collecting in the Keerom pool in March 1938 yielded a representative section of the indigenous fish population, but netting and angling failed to secure any of the large yellowfish which could be seen lurking in the shelter of large boulders. Specimens were seen, caught by a local fisherman who used a handline whilst perched on an overhanging rock, baiting with frogs. He had a distinction to apply to large yellowfish—"stompkop" and "kalverkop", which at the time we could not fathom.

The tributary on the western side, the Ratels River, flowing from the northern end of the Twenty-four Rivers range, was also examined. It held indigenous fish in its lower reaches.

The Keerom pool was remarkable for the great number of small indigenous fish (*Barbus* and *Labeo*) which it contained and large collections were made with a minnow seine net. In the still water of the pool, sawfin, *Barbus serra*, up to 1½ lb, rose to and were taken on the dry fly.

The river was explored from some distance below the Keerom pool, where it wound through scrub-grown country with a bed of gravel and occasional boulders, forming excellent stretches of fast water and minor pools in which yellowfish up to 2½ lb. were very plentiful and gave good sport when taken on fly or fly-spoon like trout, careful approach being needed.

In March 1938, the hope that our newly-imported smallmouth bass would breed successfully, and that these fish would be available for stocking the Keerom section, was very much in mind.



When the same place was visited in November 1949, with the river fairly high but clear, medium-sized yellowfish were still plentiful and took a 2½-inch spoon freely, but the smallmouth bass were by then well established in the river at Keerom, and the same tackle took a number between 2 lb. and 4 lb. and many smaller specimens. There was already a marked reduction in the numbers of small indigenous fish.

The Lower River

In the Citrusdal district and through Clanwilliam to Klaver, there are miles of white sandy shallows in the open valley, due to soil erosion, and the water becomes very warm in summer as it is a hot area. In 1938 there were many rocky defiles and large pools in the middle and lower river which were very rich in indigenous fish. The irrigation barrages at Clanwilliam and Bulshoek have greatly increased the acreage of permanent water, whilst acting as complete barriers to upstream movement of fish, as is evidenced by the shoals of yellowfish, sawfin and sandfish massed below the barrages at the time of the spring spawning run.



Clanwilliam Dam overflowing, July 1962.

(Photo: Brian Manning)

Tributaries

Tributaries of the Olifants in the middle reaches are as follows: *The Boontjies River*, 3 miles north of Citrusdal, formed by streams from Elandskloof and the Sneeuwberg Boschkloof. It runs very low in summer. In 1937 and 1938, a pool just below the road bridge was a positive aquarium of small indigenous species and yielded an almost complete and very large collection of all stages of the endemic fishes of the river system. Alas! on a subsequent occasion it was found to be silted up.

The Hex River, 10 miles north of Citrusdal, from the Sneeuwberge (Uitkyk 6648 feet). Joins the Olifants at a citrus estate of the same name. Has apparently resisted attempts to stock with trout.

The Rondegat River, flowing from the west side of Uitkyk Pass to the Rondegat arm of the Clanwilliam dam area, which may disappear with the projected raising of the barrage.

The Jan Dissels River, Clanwilliam, flowing through the environs of the town and joining the Olifants below Clanwilliam barrage. Rises near Cedarberg Sneeuwkop (6327 feet), length about 20 miles. This stream again seems to have resisted attempts to stock with trout, but it was kinder to the first introduction of smallmouth bass in August 1943.

INDIGENOUS FISH OF THE OLIFANTS / DOORN SYSTEM

As has been said, the intensive collecting of the fishes of this river system was done for the South African Museum in 1937 and 1938 with a feeling of urgency, in case the spread of the predatory bass might upset the natural balance of the indigenous fauna. There can be little doubt that the work was indeed timely.

On the negative side, the Cape kurper *Sandelia capensis* C. & V., which is common in inland waters of the south-western Cape Province, is entirely absent from the Olifants/Doorn system. It is found in the Berg and Breede systems, in the lakes of the Cape Flats and the Bredasdorp lakes, and in many rivers of the southern coastal belt as far as the Coega River on the other side of Port Elizabeth.

On the other hand, the small scaleless "mountain minnow" *Galaxias zebratus* Cast., does occur in the Olifants/Doorn system. It is confined to the southern tip of Africa, the known range being from the Willems River north of Nieuwoudville (Doorn system) around to the Kaaimans River, George. (Collected at Keerom, Boontjies River and Jan Dissels River.) It is often the only occupant of mountain streams, such as the Liesbeek, Kirstenbosch, and is common in nearly all rivers and vleis within its range.

The Chubby-head Minnow

Of the Cyprinids, the widely-distributed species *Barbus anoplus*, the chubby-head minnow or gillieminkie, is present in the Olifants/Doorn system. It does not occur otherwise in the south-western Cape, until the Gouritz system is reached. It has a very wide range in the Orange river system, and from the Gouritz is found in rivers with Indian Ocean drainage up to the Incomati.

Regarding the distribution of this species in the past, Barnard (1943) points out that the Zak River, Williston (Calvinia Division) is in the Orange river system, arising on the northern side of the Main Cape Watershed, but to the west of the Zak River there is its tributary, named the "Fish River" locally, between which and the source of the Oorlogs River in the Doorn system there is an ill-defined watershed. Further he mentions that the sources of the Tangua River (Olifants/Doorn system), Fish River (Orange system) and Buffels River (Gouritz system) approximate in the Sutherland Division. Intercommunication in earlier times has certainly been possible, when the whole country was lower and the watersheds less elevated or developed.

Barnard (1943) placed the gillieminkies of the three river systems in the one species *Barbus anoplus*, but recognised geographical forms (*typica* Gouritz, *oraniensis* Orange and *cernuus* Olifants/Doorn). The gillieminkie of the Eastern Cape and Natal was placed under a separate specific name *Barbus karkensis* G. & T. More recent opinions have disregarded the separations and considered the three forms and *karkensis* to be conspecific, *B. anoplus*.

In 1937 and 1938 this minnow-sized *Barbus* was very plentiful in the Olifants River in the areas surveyed. It is not a "red-fin". It has a dapper, well-rounded body and wide tail and the mouth is terminal. A.C.H. kept specimens in tanks for over two years, and a characteristic was their habit of poising in repose with the head slightly inclined. (Hence Latin *cernuus*, "inclining the head".) In tanks they appear silvery with a darker lateral stripe and in certain lights exhibit a purplish sheen. It has also been observed that when nets of these gillieminkies are drawn in dams in the Eastern Province, the males come out of the water with a rich golden-yellow sheen, which however is disappointingly transient when they are placed in tanks.

Endemic Fishes

The other fishes of this river system are endemic species, known only from the Olifants/Doorn. They are closely akin to others found in separate river systems, but their distinctive features are quite definite and at least denote long isolation. They comprise one small catfish, four species of *Barbus* and one of *Labeo*. As in the case of all rivers flowing to the west coast of the Cape Province, freshwater eels are absent.

Yellowfish. The Olifants/Doorn yellowfish, *Barbus capensis* A. Smith (*B. seeberi* of Gilchrist & Thompson, 1913) is the target of many anglers. Barnard (Ann.Mag.Nat. Hist. 1937) showed that the fish described by Sir Andrew Smith in 1841 as *B. capensis*

was the Olifants/Doorn yellowfish and not the "witvis" from the Berg River at Paarl. The witvis of the Berg and Breede river systems has been named *B. andrewi* in that author's memory. (Barnard 1943.)

The Olifants/Doorn yellowfish *B. capensis* has the last simple ray of the dorsal fin slender, flexible and not serrated. In the Orange Vaal smallmouth yellowfish *B. holubi* the last simple ray of the dorsal fin is strong and bony and nearly straight, also not serrated.

The name "yellowfish" is well justified, as fresh from the water it is brassy-yellow, usually without prominent spots or blotches.

B. capensis grows to a large size, and has been reputed to exceed a length of four feet. Van Riebeeck's *Journals* refer to early reports. "Danckaarts caught 'the finest fish in the world, and that in great abundance'" in the Olifants River, and "Surgeon Meerhoff also reports 'beautiful carp.'" Governor Simon van der Stel, in his diary of the journey he made to the country of the Amaquas, put on record that in the Olifants River "a fish is caught resembling in shape the carp of Holland, in taste the salmon, and of the size of a cod fish". (W. W. Thompson, 1913.)

As in those earlier days popular reports of very large yellowfish have largely gone unsubstantiated. Manley wrote to A.C.H. in May 1935 "Yellowfish run up to 20 lb. and over, while one they call the 'kalverkop' has been recorded at over 30 lb." There was certainly a belief at that time that the "kalverkop" was a different fish. In the 1930's the following were authenticated.

May 1937: Dr. Lindsay Barclay, Bulshoek, 11 lb., 27 inches.

April 1938: By local angler, authenticated by A. E. Manley, 22 lb., in Bulshoek Dam. (By photo in press, likely to be called a "kalverkop".)

May 1938: H. T. Barnes, Caretaker, Bulshoek Dam, on live bait, 15½ lb., 28½ inches. (Specimen sent to S.A. Museum.)

July 8, 1938: Alan Tregidga and Eric Wale, Cascades, below Bulshoek Dam: 14½ lb., 34 inches, 11 lb. 6 oz., 31 inches, 8 lb. 9 oz., 27½ inches, 8 lb. 2 oz., 29 inches, 8 lb. 2 oz., 28½ inches, 7 lb. 15 oz., 28½ inches, and one smaller. They used "Pike Oreno" plugs.

September 1938: Chas. Boucher and W. F. Green, Cascades: 13 lb., 13½ lb., and 15½ lb.; and H. H. Evans, 12 lb., 9 lb. and 7 lb.

October 24, 1938: At Cascades below Bulshoek, J. D. Jooste took a yellowfish of 18½ lb., which locals called a "kalverkop". (Taken to S.A. Museum.) On the previous day, J. D. Jooste and Fred Bowker caught yellowfish of 12½ lb. and 9½ lb. and some smaller ones; and H. H. Evans and De Kock, 10 lb., 8 lb., 8 lb. and 7 lb. (Evans found that the big yellowfish in the Cascades pools from September onwards were feeding on masses of sandfish in spawning run. Large yellowfish then took live baits as big as about 9 inches long.)

"Rubber-lip" yellowfish are well known to anglers in the upper ravine and at Keerom and lower down in the Olifants River. This development occurs in both sexes and does not appear to be associated with age. Two females of about two pounds each, caught by A.C.H. on a spoon at Keerom in 1937, had extreme labial development, and although continuing predatory habits (taking moving lure) had, by stomach contents, been browsing on reddish-brown algae on the stones.

Similar labial development occurs in large species of *Barbus* in Southern, Central and East Africa and in India, but "distinct species" named by the earlier taxonomists on the strength of this variable character (often from a single preserved specimen) have been relegated to synonymy when better collections became available from their type localities.

The persistent claims by local fishermen for the "kalverkop" (calf's head) which they stated to be darker in colour, broke down after many investigations, as it was quite evident that their name was applied to extra large specimens of the Olifants River yellowfish *Barbus capensis* on account of the breadth of the head.

Sawfin. This name was adopted by Barnard and Harrison as a short and descriptive colloquial. *Barbus serra* Peters, is often called "witvis" at Clanwilliam, but it is quite distinct from the witvis *B. andrewi* of the Berg and Breede river systems. The other local name "snoek" or "freshwater snoek" is even more unsuitable. It is applied on account of the length of the pointed head, but the jaws are toothless as in all Cyprinids, quite different from the savage dentition of the Dutch snoek (pike) or the Cape sea snoek (*Thyrsites atun*).

The most important feature of *B. serra* is the remarkable development of largest spine or simple ray in the front of the dorsal fin which is very strong, bony, flattened and strongly serrated or saw-like, even in quite juvenile specimens. The sawfin has not the characteristic yellowish colour of *B. capensis*, but is silvery greyish or drab-coloured above and lighter beneath, with the fins suffused with pale orange salmon. Irregular dark patches or blotches on the body seem to be a constant character of this fish. In spite of its name and dorsal armament it seems to be a most inoffensive fish, and it shoals in the same manner as the yellowfish.

Many hundreds of specimens up to 15 inches long were collected in 1937 and 1938. The full maximum adult size is uncertain. Gilchrist and Thompson (1913) wrote that "Dr." Seeber, who supplied the specimens for the S.A. Museum, stated that the male was easily distinguished by its larger head, and that the species was said to grow to a length of 2½ feet.

Small Barbus. In addition to the chubby-head minnow or gillieminkie *B. anoplus*, the Olifants/Doorn river system has two small species of the genus which are endemic and are "red-fins", not exceeding 3½ inches long.

Barbus calidus, Barnard, has the large spine of the dorsal fin thickened and serrated. It is the only species of "red-fin" with a serrated dorsal spine. Those collected and kept in tanks by A.C.H. were mottled brownish above and silvery beneath, with blood-red blotches at the bases of the dorsal, pectoral, ventral and anal fins.

Barbus phlegethon, Barnard, is another red-fin of similar appearance to the above, but on the whole with more vivid colouration of the fin blotches. In this species, the dorsal spine is slender and not serrated.

The Sandfish. The genus *Labeo* is not represented in the Berg and Breede river systems or other waters of the coastal belt until the Gouritz system is reached, but there is an endemic species in the Olifants/Doorn river system.

The Olifants River sandfish *Labeo seeberi* G. & T., is chiefly remarkable amongst other South African members of the genus for its very small and numerous scales, having 83 rows along the lateral line. (In the Orange River species *L. capensis*, the scales are nearly twice as large, viz. 44 to 48 in the lateral line, and in the Gouritz River species *L. umbratus*, there are 58 to 65 rows.) The sandfish is rather slender and its snout is quite smooth and rounded, as the mouth is protractile and situated underneath. It can be seen in clear water mouthing in the sand or working over stones or the sides of submerged rocks. It is brownish with a silvery sheen above, and lighter belly, and its habit of continually twisting and rolling about in its search for food particles causes it to flash into view and then blend with the background. It has the reputation of not being easy to take on bait.

Specimens held by A.C.H. in glass tanks browsed on the algae on the sides and water weeds, but readily took live food such as small shrimps and worms. The sandfish attains a length of about two feet. One individual lived in a tank for four years.

Leaping sandfish (*Labeo seeberi*), ascending the Cascades on the Olifants River below Bulshoek, during the spawning run in spring, 1950.

(Photo: W. Harding)



Dr. Barnard (1943) explains that Dr. J. D. F. Gilchrist in the Report of the S.A. Museum for 1906 recorded the name of "C. R. Seeber, Clanwilliam" as the donor of freshwater fishes. In their *Freshwater Fishes of South Africa* (1913) Gilchrist and Thompson passed the misprint "Dr" for "C.R." Mr. Seeber was Chief Constable at Clanwilliam and Dr. Barnard met him in 1940.

Rock Barbel. A small catfish or rock barbel *Gephyroglanis gilli*, Barnard, which does not seem to exceed a length of nine inches, is found in the Olifants/Doorn river system, although catfishes are entirely absent from the other river systems of the south-western Cape. An allied species, *G. sclateri* Blgr. occurs in the Orange/Vaal river system. *G. gilli* is the most southerly representative of the catfishes in Africa. It should be handled with care as its spines may cause infected wounds.

Specimens were collected in the Jan Dissels River furrow, at the Boontjes River and at Keerom. Several specimens were brought alive to A.C.H. in February 1939 and kept in a glass tank. The smaller ones were bold and fed freely on white (Enchytraeid) worms, but the larger ones were shy. All lived in good condition until July 1939 when they started dying off. Evidently there was something lacking in the diet provided. (Barnard, 1943.)

EXOTIC FISH

Trout

In his *Report on Trout Culture for 1895*, John L. Scott, Overseer, Jonkershoek Hatchery, Stellenbosch, stated that the first crop of ova from the acclimatised brown trout was obtained during the winter of 1895, and that "a small lot of five hundred fry were (*sic*) sent to the Cold Bokkeveld, a journey of about 16 hours . . . without loss of a single fish". This transportation by rail and Cape cart was done by Mr. Fairbridge on October 5, 1895, and he also took 2,000 fry in 1896 and 2,000 in 1898 to the same river. There are no other records of brown trout stocking in the upper Olifants, and rainbows were not available until 1899.

In the early records, when "Cold Bokkeveld, Division of Ceres" was stated it meant the upper Olifants or "Malangs" River; when "Oliphants River" was mentioned

it meant the lower river and tributaries in the Citrusdal and Clanwilliam districts. On a rough sketch map drawn by R. P. P. Myburgh of Worcester in 1914, there is a mark and legend "Fish liberated at this spot (about 1½ miles from the main stream) 17 years ago". The mark indicated one of the streams from the Cold Bokkeveld side of the intermontane plain, and the spot was crossed by a cart track from the "Shooting Box", Rosendal, to the north-eastern hills.

This map went with a report in November 1914 from R. P. P. Myburgh and C. R. C. Steytler of Ceres (in letter to F. G. Chaplin). They had explored the upper Olifants for about 10 miles down from the source ("starting as a mere stream like one of the Worcester street water courses") to "three 50-foot sheer, perpendicular drops in succession which nothing can get up". Above these waterfalls, the whole stream was teeming with brown trout. They noted only trout, frogs and crabs—no other fish. They caught some 40 trout, but nothing big. The browns rose well but did not fight well like rainbows. A photograph shows 24 brown trout from 10 to 15 inches, not in good condition.

Myburgh reported to Chaplin again in November 1916, that he had gone there again with Steytler and Uys. They had put back "an untold number of fish and when they are on the rise the river boils". His second photo shows 50 brown trout laid out on the step of a farmhouse stoep, from 11 to about 15 inches long, in fair but not high condition, with a few "slabs" amongst them.

In December 1917, C. R. C. Steytler, as Honorary Secretary of the Ceres Angling Association, made the following application to the Provincial Secretary: "It having been established that the upper reaches of the Olifants River, Witzenberg, are fully stocked with brown trout between the sizes of ten and twelve inches and smaller, my Association will esteem it a favour if the present limit of 12 inches be reduced to 10 inches in these waters. Last October, a friend and myself took thirty fish within a couple of hours, only four were 'keepers'." In those days the investigators were hampered by the difficulties of reaching the river ("a three days' trip") for only a few hours of fishing.

In 1938 (Annual Report of the Cape Piscatorial Society) it was concluded that: "In view of the fact that the brown trout, which have had over forty years of undisputed possession of the upper Olifants River, seem to have degenerated, and further that they have not been known to drop down in any numbers to the lower river", rainbow trout be introduced to the river above the Visgat Falls.

The 8th Annual Report, August 1939, recorded that the Society had purchased 1,000 rainbow trout fingerlings from the Jonkershoek Hatchery. These were sent by train to Wolseley on November 22, 1938, and collected by Mr. Gerald Dicey, who kindly lent a lorry and two labourers for the transportation. Mr. P. A. J. Page took charge on behalf of Mr. Dicey and the job was done in three hours from the arrival of the train. The rainbows were released in gravel runs about 1½ miles below the last farm house on the plateau.

Other Stocking of Trout. In the early days of trout availability at the Cape, brown trout ova and young fry were sent to all manner of places in a hopeful spirit of "trial and error", and in a large proportion of cases nothing more was heard of them. The same practice was continued when rainbows became available at the turn of the century. The details of localities given in the Jonkershoek records from 1894 to 1906 (before F. G. Chaplin's time) were very meagre.

In November 1903 "4,000 rainbow fry" and in December 1904 "6,000 mixed fry" were sent to the "Oliphants River". In one case "Eendekuil" was stated, the rail-head for "Modderfontein" now Citrusdal, and it seems probable that they were carted over Grey's Pass to Mr. McGregor at Modderfontein for the tributaries in that district.

In the Cape Government Agricultural Department Report for that period it was recorded that in November 1906, 12,000 mixed trout fry were sent from Jonkershoek for the "Hex River", a tributary of the Olifants about 10 miles north of Citrusdal. Mr. F. Moltano was thanked for his assistance in this comparatively large attempt, but no other details were given. The attempt would seem to have been abortive, and in 1933, through the good offices of the Hon. P. O. Sauer, 1,000 rainbow ova were sent to Mr. C. J. Visser, Jr., of "Hexrivier". (When A. T. Packham and A.C.H. explored and fished this Hex River in July 1949, no trout were found nor were there any local reports of them.)

Cedarberg Streams. From the earliest days of trout acclimatisation, officers of the Forestry Department have taken great interest in the work, and those in the Cedarberg, Clanwilliam, made repeated attempts to establish trout, both on the eastern side of the Uityk Pass in streams draining to the Doorn River and in the stream flowing past Algeria Forest Station (now Ganskraal) which goes to the Rondegat stream feeding into the present Clanwilliam Dam.

The attempts recorded were: 1899, 5,000 brown trout ova; August 1904, 3,000 rainbow ova, and October 1905, 5,000 mixed trout fry. In August 1918, Mr. Bath, District Forest Officer, Cedarberg, had 650 brown and 1,330 rainbow ova. He reported a complete failure on account of high temperature, and (in sad repetition of Lachlan Maclean's troubles in 1884 and Latour's in 1892—had they not learned of these tragedies?) "from the effects of the soft water upon zinc of the hatching trays which were not properly treated". Since then there are no further records.

Jan Dissels River. Some early attempts were made to introduce trout to this tributary. In August 1915, a "Trout Acclimatisation Society" was formed at Clanwilliam on the instigation of Dr. McArthur. Hatching equipment was obtained and installed at a house with a water lead from the Jan Dissels furrow, and 1,000 brown and 1,000 rainbow ova were sent from Jonkershoek. The first batch of ova was a complete failure, and from a second batch of 1,500 rainbow ova later in August only 30 alevins survived and were turned into the river. At the same time they spoke of obtaining hatching troughs and ova for Mr. McGregor at Modderfontein and Mr. Visser at Hex River. Failure seems to have killed local enthusiasm and nothing more is on record about the Clanwilliam Society. In recent years, one or more private attempts have been made with trout ova in Boskloof.



In August 1915, 1,000 mixed trout ova were sent from Jonkershoek to Mr. A. Leipoldt, P.O. Cedarberg. The instructions sounded a bit involved; post to Clanwilliam, thence by horseback to Wupperthal and on by carrier to P.O. Cedarberg—3½ days in all. No locality was mentioned, but it could have been one of the streams forming the Tra Tra River. No results are on record.

Two trout streams have been established on private property on the Doorn River side, viz. the Krom and Breekkran streams, which are scheduled trout areas and contained some rainbows up to 2 lb., but in rather poor condition, in 1963.

Largemouth Bass

On October 17, 1933, a free issue of 36 largemouth bass yearlings was sent from Jonkershoek to A. E. Manley at the Irrigation Department, Klaver, and all arrived safely. Manley put out some of the bass in the dam area at the Pont about 3 miles above the Bulshoek barrage. (He was charged £1.9.0 for railage, but "got a couple of others to pay something towards it.") No signs of them had been seen by April 17, 1935. These hatchery-bred bass were small, but they were 12 months old and from experience elsewhere could be expected to grow to breeding size by October 1934 in a

fertile water. It was a small planting in a big area and time had to elapse before positive results could be revealed. But as in other large waters at that time, stocked with a mere handful of bass, "miracles took longer", but did happen!

There was talk of obtaining another batch, when in March 1936 Manley obtained five bass of 8 to 9 inches long at the top of the Bulshoek dam area. Judged from their scales, these had been bred in the dam in 1934, and had been "small-mode" fish of about 3½ inches long by the 1935 winter. Later in March 1936 he saw larger bass in the pool of the river under the Bulshoek barrage. He caught two of 13½ and 13¼ inches and their scales showed them to be also 1934-bred, but of a larger growth mode of about 10 inches at the 1935 winter. On April 10, 1936, he saw quite a number of bass in the same pool and caught six. One of 14 inches was 1934-bred with an intermediate growth mode to 7 inches/1935, but three from 15½ to 16 inches long were all 1934-bred and had made large mode growth to about 11 inches by the 1935 winter. In the same month bass were noted to have spread downstream to Krans Siphon on the way to Klaver.

None of the scales from the larger bass indicated that they were hatchery-bred originals. The wild-bred bass showed the interesting bimodality of growth in a year class which had been a feature in other waters, such as Paarde Vlei and Brand Vlei. The small number of Jonkershoek bass had certainly done very well. They had bred again in October 1935, as fingerlings of 2½ to 3 inches were found in March 1936.

In January 1937, large numbers of bass up to 2½ lb. and 16 inches long were congregated in the pool below the Bulshoek barrage, and from scale-reading these included both 1934-bred and 1935-bred fish. During March 1937 Manley caught eight bass up to 3 lb. at the Rietvlei Pont in the Bulshoek Dam, and noted that they were cruising in shoals associated according to size. (Similar behaviour had been noted in Paarde Vlei when the bass became very numerous there.) In that month, bass bred in 1936 were up to 7½ inches long. From then onwards, the progeny of the small band of stalwart pioneers had stocked the whole lower river without the need for further introductions.

But the high barrage of the Clanwilliam storage dam prevented all upstream movement of fish to the upper river. In August 1936, 24 yearling European perch had been supplied to the Society and released in the Rondegat creek of the Clanwilliam dam, but nothing more was seen of them. Late in September 1936, a member transported a pair of largemouth bass, on the point of breeding, from Jonkershoek to the same spot. It was decided to stock by transportation of large bass from the Bulshoek area.

In April 1937, when the S.A. Museum party was working in the area, hauls with a seine net were made in the rocky pool under the Bulshoek barrage, but it was not possible to enclose wily fish like bass owing to snagging of the net, although large numbers of indigenous fish were taken. There followed a somewhat ludicrous exercise—lost to posterity for lack of a movie camera. Manley fished with live baits, high up on the top of the barrage. A.C.H., in a terribly leaky dinghy (damaged by transport on a lorry) making water so fast that an assistant bailed continually with a four-gallon tin and always in imminent danger of foundering, rowed into the turmoil of water under the valves to net each bass brought to the surface by the elevated angler. Five good ones were secured, 1½ lb. to 3¼ lb. and one of 1 lb., and these were taken alive to the Clanwilliam dam and released above the wall. This work was continued by H. H. Evans and other local members of the Cape Piscatorial Society, in face of many difficulties. They moved 15 large bass just before the next breeding season, several obviously ripe females from 2 lb. to 3 lb.

Largemouth bass fishing was well established in the lower Olifants River, and hundreds were caught in 1938. Manley watched two very large bass, which he thought might be some of the original stock, in the pool under the apron of the Bulshoek



Largemouth bass of 7 lb. 11 oz. caught in the Clanwilliam Dam in August 1951 by Mr. C. L. White. At that time it beat the existing record.

(Photo: D. Roth)

barrage. In July 1938, A. T. Packham caught a female bass of 4 lb. 2 oz. in the same pool on Pflueger plug—one of the 1934 wild breeding. In February 1939, John Tregidga took a bass of 21½ inches, 4 lb. 12 oz., C.F. 56, in this pool. It was 3+ years old, one of the fastest grown largemouth bass recorded in the Cape to that time.

Before he was transferred from Clanwilliam in February 1940, H. H. Evans reported that he had seen young largemouth bass in a bay of the Clanwilliam dam earlier in the summer, thus justifying the transportation work. Also that the bass had travelled 15 miles upstream from Bulshoek, and that numbers up to 4 lb. had been caught in pools under the Clanwilliam barrage. This would, of course, have simplified the stocking of the upper dam had it occurred earlier, but the earlier transportation had done the job.

On August 20, 1951, a member, Mr. C. L. White, with no previous experience of bass fishing, caught his first bass and beat the existing South African record by one ounce! He made his debut in the Rondegat area of the Clanwilliam dam, and with a red "Cottam Killer" hooked and landed a female largemouth bass of 7 lb. 11 oz., 22½ inches long, C.F. 68.5, which was weighed by the Clanwilliam postmaster. Its scales showed that it was 7 years old, and had been a large yearling of about 10 inches.

Smallmouth Bass

On the morning of August 11, 1943, fifty smallmouth bass yearlings, railed from the Jonkershoek Hatchery the previous day, arrived at Graafwater station and were collected by the late Thos. H. Brooks, a member who was staying at Clanwilliam. All were alive and vigorous, and he took them up into Boskloof and released them in a

good pool of the Jan Dissels River. The stocking of this tributary of the Olifants River with smallmouth bass had been a project of the Society since these fish became available in 1938, but had been delayed by war-time difficulties. The Jan Dissels joins the main river below the Clanwilliam barrage.

The point of release was a large pool near the Boskloof schoolhouse, about 7 miles up the valley from Clanwilliam. On April 2, 1945, A.C.H. visited this spot, and at the head of the pool found two adult smallmouth bass of 1½ to 2 lb. In a smaller pool just above, there were three unmistakable smallmouth fingerlings between 4 and 7 inches long. These would have been bred in the river in the spring of 1944 when their introduced parents were two years old. The Jan Dissels contained numerous small indigenous fish as "forage".

This Jan Dissels river stocking and breeding affected the Olifants system only below the Clanwilliam dam. The Society therefore booked 1,000 smallmouth fingerlings with the Provincial Administration (paying £12.10—on the £1 for £1 basis—and £8.3.2 road transport charges) for planting in the Olifants above Citrusdal. On December 18, 1945, Dr. D. Hey planted 1,000 well-grown smallmouth fingerlings at Keerom. At the same time he released 1,350 spotted bass as a gratis issue for a public water. (The progress of the spotted bass is very much in doubt. They are very difficult for the ordinary angler to identify.)

Progress of Smallmouth Bass. Following the discovery of the growth and breeding of the smallmouth bass planted in the Jan Dissels River in August 1943, reports were awaited for a rather long period, as might be expected perhaps in such a long and remote river.

In February 1948, E. Cottam found that the entire stretch of the Olifants River from the road below the Clanwilliam barrage downstream to the Cascades below Bulshoek produced strike after strike from smallmouth bass. He took 12 from ½ lb. to 1½ lb. on Abu spinner, and this was the first time he had encountered these fish in this river. (PISCATOR No. 5.)

Vincent Wells, writing on "The Olifants" in PISCATOR No. 10, June 1949, reported that the smallmouth bass seemed to be in four age groups; fingerlings, fish of about 12 inches, many of 1½ lb. and occasional two-pounders, all in the pink of condition and taking flies freely. This referred to the river between Citrusdal and Clanwilliam, and therefore the fish were from the second stocking at Keerom in December 1945.

As previously mentioned, by November 1949 smallmouth bass from 2 lb. to 4 lb. and smaller individuals were plentiful in the second stocking area at Keerom above Citrusdal.

In March 1951, D. Elzinga caught a smallmouth bass of 6 lb. 2 oz. on a "Shiner Minnow" in the Clanwilliam dam. In August 1951, D. Roth had smallmouth of 3½ lb. (18 miles above the dam) and 3 lb. 10 oz. in the dam. The latter was 4+ years old. (PISCATOR No. 19.)

On August 30, 1952, Messrs. A. A. and J. R. McIver, fishing a high river some miles downstream of Clanwilliam, had a remarkable bag of smallmouth between 5 and 6 p.m. when the bass suddenly started to strike red "Cottam Killer" spinners. They took 11, and 10 of the smallmouth were between 3 lb. and 4 lb. 5 oz. Also below Clanwilliam, about 11 miles, Mr. and Mrs. P. Campbell-Hoyle took smallmouth of 3 lb. 13 oz. and 4 lb. 12 oz. on August 12, 1952, on jointed floating plugs, the larger by the lady. At the top of the Bulshoek Dam in July 1952, D. Elzinga took a smallmouth of 19½ inches, 3 lb. 9 oz., C.F. 51, age 3+ years. (PISCATOR No. 23.)

In more recent years, reports on smallmouth bass fishing in the Olifants River have been given in PISCATOR. As in the cases of the Berg and Breede rivers, the smallmouth bass have nearly ousted the largemouth bass from their earlier dominance of the Olifants River.

R. A. Jubb, in his article in PISCATOR No. 51, Autumn 1961 (with drawings of the yellowfish, sawfin and sandfish by Mrs. H. M. Jubb), reported that beautiful smallmouth bass were plentiful in the Bulshoek dam a mile above the barrage, and that specimens between 3 lb. and 5 lb. were taken on a plug with barbless hooks, and released.

He also found numbers of bluegills and vlei kurpers *Tilapia sparrmanii* in the Olifants River. As neither of these species have been planted deliberately in the river, their presence can be attributed to the stocking of farm dams; as they have been distributed as "forage fish", with the inevitable result of escapes into the drainage system. Mr. and Mrs. Jubb found that the blanketing of former rocky reaches by white sand, the product of soil erosion, had been very much increased. They were unable to collect any specimens of the small endemic species which were so numerous in the 1930's, particularly the red-fin minnows.

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