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THE FOOD OF TROUT IN NEW SOUTH WALES. 1935-1936.

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THE accompanying paper embodies the results of the investigation into the food of trout in New South Wales carried out during the season 1935-1936, and gives details of the stomach contents of 108 Rainbow Trout (*Salmo irideus* Gibbons) and 72 Brown Trout (*Salmo fario* Linnæus).

The information obtained in the course of the season's work forms a valuable addition to our knowledge of the varied forms of life which constitute the diet of the fish in those inland waters from which it was possible to obtain material for examination. Members of the Rod Fishers' Society of New South Wales again ably assisted in securing and submitting stomachs from the fish caught, and by their encouragement and co-operation have rendered the investigation possible. It is, however, somewhat disappointing that so few streams are represented, in spite of repeated requests for material from new localities, especially as the information which could have been obtained from such sources would have been of undoubted value in estimating the relative suitability of these waters for future liberation of fry. The information which has been obtained, however, has served to widen considerably our knowledge of certain rivers, and has, in some cases, filled lacunæ in our records, rendering possible the compilation of very complete data for some districts. It is owing to the enthusiasm of Dr. A. J. Spiller Brandon that our information regarding the Tuross River, with reference to both Brown and Rainbow Trout, is very satisfactory, and forms a valuable basis for further work, especially should it be considered necessary to make a detailed survey of the aquatic and terrestrial life of the stream. Such a survey, carried out in full detail on one river, would prove of undoubted scientific interest and value.

Owing to the kindness of Dr. A. J. Spiller Brandon, I was enabled to accompany him to the Tuross River in January, where, as his guest, I was able to carry out work in the field, which, in spite of the short time available, has been valuable in elucidating certain problems that had developed in the course of the laboratory work to which the investigation had previously been confined. This field work will be referred to in greater detail below, together with certain tentative recommendations arising from my observations.

Notes on Food.

The presence of fish fry in four stomachs of Rainbow Trout from the McLaughlin River is of considerable interest in connection with the contention of many anglers that the adult fish are responsible for the destruction of many trout fry. Seventy-seven fry were obtained, all in an advanced state of digestion,

and, although specific identification was impossible, Mr. G. P. Whitley, Ichthyologist, of the Australian Museum, was able to give me an assurance that the fish were not trout, and that of this he had no doubt. It is possible that the young fish were a species of gudgeon, popularly known as "Mountain Trout", which would form a very fine food for the trout.

Fish remains have occurred only in one other instance, where the bones of a small cat-fish were recovered.

Fish from the McLaughlin River also contained very large numbers of the larvæ of a Stratiomyiid fly which had previously occurred only sporadically. Many Bombyliid larvæ were also present. The small Dytiscid beetle, *Necterosoma penicillata*, apparently abounds in the McLaughlin, since of a total of 1,377 Coleoptera recovered, the majority proved to be of this species.

The total of 1,256 caddis cases from one stomach from the Kybean River constitutes a record for the number of these insects recovered from any one fish in the course of the investigation, and is concrete evidence of the abundance of these insects which must be present in this river, forming a rich feeding ground for the trout.

The majority of the stomachs examined revealed little in the nature of food that has not been previously recorded in the course of the investigation.

Economic Value of the Investigation.

The realization of the economic value of the investigation of the food of trout still makes slow progress against the generally preconceived opinion that such research has but a purely academic interest, with the result that its practical application tends to become lost sight of and obscured. Such an investigation requires to be translated into terms of cash value before public interest and support are assured.

Dr. R. J. Tillyard has ably stated the position in a recent paper.[1] He says: "The study of the more important insects which serve as food for trout in any given country is, in these days of applied science, an indispensable preliminary to a full understanding of the methods by which a successful and permanent trout-fishery can be maintained in that country. For many years I have been interested in those groups of aquatic insects which are of most importance as trout-food. But I have never found, anywhere in Australia, any public realisation of their economic importance, and thus it comes about that, even to-day, when scientific ideas have penetrated further into the public mind than ever before, it still remains impossible for any work on such insects to be carried out officially. The alternatives are, either to leave the subject alone and let the knowledge gained die with one, or to work at the subject slowly in one's spare time in the hope that something of value may come out of it in time to save the inland fisheries of Australia from deterioration due to lack of scientific knowledge.

"It is my considered opinion that the time has now come when it is imperative that a scientific survey of the trout-food insects should be carried out in all the principal trout-fishing districts of the Commonwealth. These are to be found in New South Wales, Federal Capital Territory, Victoria, and Tasmania. From a faunal point of view, the first three are closely united, and might well be studied as a faunal unit, though the number and variety of the streams included would

[1] The Trout-food Insects of Tasmania. Part I—A Study of the Genotype of the Mayfly Genus Atalophlebia and its Life History. *Paps. and Procs. Roy. Soc. Tas.*, 1933 (1934), pp. 1-16, pls. i-ii.

make a thorough survey a lengthy and difficult task. Tasmania, however, needs to be studied separately, not only because it is an island, possessing marked peculiarities in its aquatic fauna, but also because in Tasmania alone, of any part of the Commonwealth, there are present fresh-water lakes suitable for trout-fishing and, in many ways, superior to the rivers."

In the present investigation it has been possible to carry out the work and publish the results under the official ægis of the Australian Museum, and with the co-operation of the New South Wales Rod Fishers' Society, but there is still much prejudice and misconception to be overcome.

There is no doubt that a thorough knowledge of the conditions existing in the various trout streams is essential for the development of trout-fishing in Australia, and the placing of the question of further stocking upon a sound scientific basis. Waste of money only can result where fish are introduced into streams where the existing conditions are obviously unsatisfactory, or where the profitable carrying capacity of a river is, or will be, exceeded. It is to be hoped that the question of a detailed scientific survey of the trout-food insects of Australia may be undertaken in the future, and the results co-ordinated by the newly-formed Federal Association. The systematic collection of trout-food insects from the Tasmanian lakes has already been undertaken by Mr. Critchley Parker, of Melbourne, and the necessary work of research is being carried out by Mr. Martin E. Mosely, of the British Museum (Natural History).

Stream Reports.

The following reports of stream conditions, based upon notes published in the *New South Wales Rod Fishers' Society's Gazette*, are of value in considering the results obtained from the examination of the stomach contents, since they record the conditions existing at the time of the capture of the fish.

Kybean River.

Mr. F. W. Barrett visited the Kybean River, which at the time was covered with weeds, encroaching almost to the middle of the stream; however, he was successful in obtaining some good fish, his best being 4¾ lb.; others taken weighed 3½ lb. and 2 lb., the smallest being 1½ lb.

McLaughlin River.

Mr. F. W. Barrett visited the McLaughlin River, and here again the weed (known as "Frogs' Blanket") was a disadvantage, the fish making good use of it when hooked. He experienced some good fishing there, his largest fish being 3½ lb., and he caught several others near that weight. Mr. W. J. Forbes also visited the river, and once more weather conditions were not conducive to good fishing. On this river the fish are, as a rule, very large, averaging just under 3 lb. During this visit, the river was fairly well covered with the "Frogs' Blanket" weed. Dr. Archibald Glen reported that the fishing in the McLaughlin was not as good this season as previously, owing to bad weather conditions; but the type of fish to be got from this stream are well worth persevering for, being large and numerous.

Badja River.

Mr. A. C. Ebsworth paid a short visit to the Badja River during October, and encountered bad weather; it was raining when he arrived, and wet weather continued, with the result that the river rose about four feet above its usual level,

and was running like a mill race; consequently he did not get many fish. A succession of floods had removed most of the weed, with the result that the fish were not in the spots where one was accustomed to find them in past years. The weed, however, is beginning to grow again, and within the next year or two the fishing should be good. About a week after his arrival, when the weather had abated, it was quite a revelation to find one evening an enormous rise of fish; this was very encouraging, for these large numbers of fish, from ¾ to 1½ lb. in weight, indicate that in another year or so the fishing on this river should be very good.

Barrington River.

Mr. G. H. Montgomery spent a week or two on the Barrington River. The weather was not good, and on the whole his trip was not successful. Dr. C. Anderson reported the fishing as generally unsatisfactory. This river is a small stream with some big holes here and there.

Gungarlin River.

Mr. R. J. Jenner visited the Gungarlin River on two occasions during the season. This stream has its source between Kiandra and Adaminaby, about 6,000 feet above sea-level, and winds downwards through the Snowy Plains to the Snowy River. In December the fish were numerous, and one could say that this stream is the breeding ground for the Snowy and other rivers connected with it. The fish averaged two pounds.

Fish River.

Mr. W. J. Forbes visited Oberon at the beginning of the season, but weather conditions were unsatisfactory and the fish were not moving. Mr. Wm. Smith was at Oberon in October, but only caught a few fish. He was there again for Christmas, when the river was very low and clear, and the fish could be seen moving about, but results were not satisfactory.

Duckmaloi River.

At the opening of the season, Mr. Maurice Brown visited "Trout Park" on the Duckmaloi River, where he found that the fishing was not good, and he only caught enough for the camp. He went there again during the season, with the same result.

Tuross River.

Dr. A. J. Spiller Brandon reported that his experiences of the past season were varied, and that reports which had come to hand, not only from this State but Victoria, were to the effect that the season just closed was below the usual standard. He said it was very hard to explain this. Conjecture only is possible, but we know that it has been a very extraordinary season, with cold weather and high winds, interspersed with hot days; and nothing seems to upset trout more than sudden changes. Particularly dry weather was experienced, and possibly this had a quietening effect on the fish in regard to their feeding habits, and may have also affected the various insects, etc., on which the trout live.

During the first week in October, Dr. Brandon visited the Tuross River mainly for the purpose of releasing the fry which had hatched in the Society's Hatching Box in the river. He was there for 24 hours, and after attending to the box,

he walked along to examine the stream, and found it very low and the fish very plentiful. It was interesting to note that they were feeding upon the bottom, and could be seen where there was no weed, nosing in the sand and suddenly darting at something which they had disturbed—probably shrimps or larvæ. Fishing was hopeless, as one could put a fly down over their noses and they were not at all interested.

At the end of October conditions were considerably better, but at the same time the fishing was not so good as in previous years. Again sudden changes were experienced, which apparently had their effect upon the fish.

He visited this stream again in December, when he found the fishing much better, and, in comparison with the previous visit, interesting. During the previous season the Christmas beetle (*Anoplognathus*) was much in evidence on the river gums overhanging the stream, and it was only a matter of going under these gums to find the fish waiting for the beetles to fall into the water; but this season the Christmas beetle did not live up to its name, and it was not until after Christmas that it made its appearance, and then seemed to avoid all gums on the river bank, but was plentiful on gum trees elsewhere, with the result that, whereas during the previous year large numbers of fish were caught under these gum trees, this year he only caught one throughout the whole season.

Towards the end of January hot weather was experienced, and conditions became more settled. The river being rather low, the fishing became extremely bad. It is very hard to give a reason; there was certainly plenty of insect life on the water, but the surface of the water was definitely warm, which no doubt kept the fish on the bottom. These conditions continued until a cold change was experienced, with rain and a fresh in the river, when the fishing became decidedly better, but towards the middle of February there was a continuous emergence of the little black ant or a Chironomid midge, and a light breeze was blowing them onto the water. Big fish were coming to the surface, and it was most exasperating to sit on the bank and watch them (they were not frightened) having a continuous feast from daylight until dark. What the fish saw in this tiny ant it is hard to say, but it was evidently something very attractive. Dr. Brandon had in his box some of the so-called "black ants", which are supposed to imitate the black ant; he put one on the water amongst the multitude of insects, but his small imitation looked like an elephant compared to the live insect, and the gut looked like a piece of rope. The fish took no notice of the fly. These conditions persisted for about a fortnight, and, in exasperation, he eventually avoided this particular pool. He is of the opinion that when the trout are rising like this, it is a fluke if you catch one. The Brown Trout, although plentiful in the river, were noted as being absent from those waters where the ants were numerous. The fishing from day to day after this was better, and it was possible to obtain a few nice fish if one persevered.

Field Notes on the Tuross River.

During a visit to the Tuross River as the guest of Dr. A. J. Spiller Brandon, between the 15th and 22nd January, 1936, the writer had an opportunity of making a preliminary survey of the stream conditions. Owing to heavy rains flooding the river during the first few days of my visit, it was not possible to carry out much work on the aquatic insects and other stream-bed population, but work on these was carried out towards the end of my stay.

For the preliminary work the Tuross River was conveniently divided into three main types: (1) Stream with thick fringing growth of tea-tree and other flowering bushes which overhang the water, (2) more open country with tall river gums, as at "Nosey Bobs", and (3) stream confined between rocky banks and with sparse vegetation. At the time of my visit the tea-tree was in full blossom, and abounded with flower-haunting insects, *Phyllotocus* spp., Elateridæ, Thynnid wasps, etc., which, falling from the bushes into the water beneath, provided a constant supply of food for the fish. That the fish availed themselves of this insect food is amply borne out by the contents of the stomachs examined. The river gums on the more open stretches carried a heavy population of *Anoplognathus*, Cerambycidæ, etc. In the case of the *Anoplognathus*, pairing was in progress, and the insects frequently lost their footing in the foliage and fell into the river below, where it was seldom that they struggled for long before being taken by trout. These beetles, if thrown upon the water, were always readily taken by the fish, and formed a useful indication of their presence in any particular reach of water, and there is no doubt that during their season the beetles form an important item of trout-food; they have the advantage of being of large size, and, during the early part of the season, the bodies of the females contain considerable nutriment in the developing ova; later the gravid females are crammed with eggs in an advanced state of development and of large size. Those portions of the stream which are hemmed in by rocky banks carry a smaller population of terrestrial insect fauna, but are undoubtedly, under normal conditions, rich in aquatic species.

The examination of the insect population of the stream itself revealed a general scarcity of aquatic forms. This, I believe, is mainly due to the fact that repeated flooding last year has tended to scour the river clean of weed growth. Here and there the weed is beginning to re-establish itself, and it is in such places that the aquatic insects are numerous. The basis of these gatherings of insects is the phytophagus species, with the consequent attendance of the carnivorous insects which prey upon them, and, attracted by their presence, occur in considerable numbers. The dominant insect form in these weedy areas is the caddis, while the predatory insects are largely represented by a number of species of Odonata, *Corixa*, *Notonecta*, etc. Mayfly nymphs were reasonably plentiful where abundant vegetable matter was present, as in some of the open pools, or where branches and trunks of trees have fallen into the stream; the latter situations are especially important.

Few caddis were present on the gravelly bottoms, and were only a little more numerous on the sandy areas. With the exception of the weedy areas, previously mentioned, caddis were generally very scarce throughout the area of the stream investigated, and their absence is strikingly borne out by the examination of the stomach contents. In previous years extremely large numbers of caddis cases were obtained from trout stomachs, and it was unusual to find examples which did not contain, at least, some of these insects. In this season's work it has been exceptional to find stomachs which contained even a moderate number, and in very many cases they have been completely absent.

The majority of the Odonata, which were numerous along the stream, were breeding extensively in nearby marshy areas. The dragonflies cling in large numbers to the sedge and bushes at the river's edge, and in dull misty weather are in semi-torpid condition and may be picked from their resting places with the fingers—the use of a net being unnecessary. While in this torpid condition many

of the insects fall into the water, and become a prey to the fish. Sometimes, however, large numbers of adults of the stream-breeding species are taken by the fish when they descend the stems of the water-weeds in the course of ovipositing, on which occasions the sexes are completely submerged, *i.e.*, the Zygopterid forms.

Notes and Recommendations.

From the work carried out on the Tuross River in 1936 and the investigation of the stomach contents of the trout from a number of streams in New South Wales each season since 1931, the following notes may have some value in assessing the value of trout streams, selecting further waters for the liberation of fry, and the possible improvement of streams of poor quality, or where deterioration has taken, or is taking, place. Such suggestions are tentative only, and further work is required before definite recommendations can be made.

Weeds.

Although generally disliked by the angler, there is no doubt that the growth of aquatic vegetation in the rivers is conducive to a plentiful supply of food for the fish in all stages, and possibly forms one of the most satisfactory breeding-places for the aquatic forms of life which form such an important item in the food of trout. The effect of weed growth upon the animal population of the streams is very conclusively borne out in the case of the Tuross River. Here we find caddis-worms occupying a very important position in the food of the fish until 1935, when heavy and repeated floods cleared the weed-growth from the stream beds, with the result that the numbers of these insects fell to relatively small proportions. A field examination of the river disclosed that only where weeds were present were the insects at all numerous in 1936. A condition of affairs similar to that obtaining in the Tuross seems to exist on the Badja. In each case fishing is reported as not being as satisfactory as in previous years. The McLaughlin and Kybean Rivers are reported as being covered very thickly with weed ("Frog's Blanket"), and here the proportion of aquatic insects—especially caddis—is extremely high, and the fish from these streams seem to be of good quality and of a consistently high weight.

Vegetation on Stream Banks.

Vegetation growing on the stream banks, especially tea-tree and other flowering shrubs, forms a valuable attraction for foliage-feeding and flower-haunting terrestrial insects, and large numbers of these insects drop from the foliage of the shrubs into the water beneath, where they are consumed by the fish. A very large proportion of the food of trout in Australia consists of such terrestrial forms of life. Such vegetation should, therefore, be strictly preserved, and its destruction should not be permitted under any circumstances. It is noted (*N.S.W. Rod Fishers' Society's Gazette*, iii, January, 1935, p. 4) that Mr. Church, in referring to the Duckmaloi River, states: "Over nine miles of river frontage, including some four miles of Bindo Creek (a happy hunting ground for rainbows), Mr. Porter has cleared a track right round this, removing tea-tree scrub in many places, and is actively engaged in fostering the gentle art of fly fishing . . . these nine miles almost represent a fish sanctuary, and are rapidly becoming stocked with excellent sized fish, both Rainbow and Brown." It is perhaps significant to find the following report in a later issue of the same journal (iv, June, 1936, p. 9): "Mr. Maurice Brown had several trips during the season; and at the

opening visited 'Trout Park' on the Duckmaloi River, where he found the fishing not much good; it is beautiful water, and he caught about enough for the camp. He went there again during the season with the same result." A very large proportion of the food of trout from the Duckmaloi River was made up of terrestrial insects, but unfortunately no material was secured from that stream during the present season, when the information would have been especially valuable.

The question of planting native shrubs, such as tea-tree, along the banks of streams, where these are lacking in suitable vegetation, as in the lower reaches of the Fish River, might be worthy of some consideration and investigation.

Submerged Logs and Branches.

Where logs and branches lie submerged in the streams, they unquestionably form a highly favourable breeding ground for Mayfly nymphs, and consequently are valuable in augmenting the supply of food available for the fish. Where practicable, such logs and branches might well be sunk in suitable situations where they are unlikely to interfere with the operations of the angler, and by this means the numbers of Mayfly nymphs in the stream should be greatly increased. Dr. R. J. Tillyard has dealt at some length with this question, as regards Tasmanian conditions, in his paper, previously quoted. He says: "It would manifestly be unwise to disturb the balance of nature in Lake Leake by the introduction of other species of Mayflies until such time as . . . . observations have been carefully made. Further, a complete survey of the Mayfly fauna of the lake is required, including the life-histories and distribution of the species found there. When that has been done, the value of such an experiment as the introduction of the nymphs of the 'Penstock Brown' or other species of Mayfly can be scientifically calculated, and it may well be that such introductions may then be shown to be desirable for the improvement of trout-fishing.

"In the meanwhile, I think that the supply of this Mayfly [*Atalophlebia australis*] in the Macquarie River [Tasmania] could be augmented, or at any rate prevented from dropping, by a judicious use of more or less decayed timber, such as rotten logs. When old willows or gum-trees are cleared away near the river, they might be cut into suitable lengths, and placed in various parts of the river in such a way that they are not likely to become snags for the anglers. The Mayfly nymphs will find their way to these logs in large numbers, and, hiding in their cracks and crannies, proceed to obtain a rich living from the vegetable material which collects on them and from the products of their decay. In Lake Leake there would appear to be already a plentiful supply of decaying wood, since part of the area submerged to form this lake was originally forest. This is probably one of the chief reasons for the abundance and large size of *Atalophlebia australis* on this artificial sheet of water."

Note on the Suitability of the Fish River.

From a careful examination of the material available, it would appear that the Fish River in the vicinity of Lithgow is wholly unsuited for the conservation of trout, and the existing small size of the fish is, apparently, wholly due to the scarcity of animal food available in, and in the vicinity of, these waters; indeed, it is remarkable that the fish manage to subsist, let alone attain even as much growth, upon the paucity of food revealed by the analysis of their stomach contents. In the upper reaches of the river in the Oberon district the conditions

appear to be somewhat better, but even then the position does not seem wholly satisfactory, but more definite conclusions are precluded by lack of material for examination. The principal fish-food in the stream near Oberon appears to be Mollusca. In considering the figures of the other groups taken by the fish, the large number of 488 lepidopterous larvæ should be discounted, since the fish obtained these caterpillars during a season when the insects occurred in plague numbers.

It is highly desirable that more material should be obtained from the Fish River, and that in every case scale readings should be correlated with the stomach contents in order that we may obtain data regarding the relation of the food supply to the rate of growth. Such details would form valuable records in connection with any stream, and this aspect of the matter should on no account be lost sight of, for it forms an aspect of the investigation which should lead to valuable results, and in future investigation might well receive special attention. Rivers which might receive such special attention on these lines are the Fish, Barrington, Tuross, McLaughlin and Kybean.

In conclusion, I desire to express my appreciation of the encouragement and assistance received from the Council and members of the New South Wales Rod Fishers' Society, especially to Drs. C. Anderson and A. Glen; Messrs. G. H. Montgomery, F. W. Barrett, Jas. Gaden and R. W. Jenner for the collection and submission of the material for examination.

Thanks are especially due to Dr. A. J. Spiller Brandon, on whose advice and assistance I have been always able to rely throughout the course of the investigation, and it is due to his industry that we possess such a complete record of the food of the trout in the Tuross River; his kindness in rendering possible my visit to the Tuross River has already been mentioned.

General Summary of Food of Rainbow Trout.

Stomachs examined	108
Coleoptera	1,844
Trichoptera	778
Ephemeroptera	161
Lepidoptera	27
Hemiptera	329
Hymenoptera	62
Diptera	526
Odonata	82
Orthoptera	16
Isoptera	92
Perlaria	48
Neuroptera (Mantispidæ)	1
Thysanoptera	17
Arachnida	102
Myriapoda	1
Vermes	7
Crustacea	102
Amphibia	21
Pisces	77

Stomach Contents of Rainbow Trout.

(*Salmo irideus* Gibbons.)

Barrington River, Barrington Tops.

No. 1.—♀, 1 lb.; 13 November, 1935, 12 (noon). Collected by Mr. H. Clode. Fly: Anderson's Brown Spinner. Coleoptera: 1 Scarabæid beetle (*Xyloryctus montanus*), 1 Carab beetle (*Helluo* sp.), 2 *Heteronychus* sp., 2 *Cryptocephalus* sp., 1 Tenebrionid beetle (? gen. et sp.), 2 Click beetles (Elateridæ—? gen. et sp.). Hemiptera: 1 Pentatomid bug (*Scutiphora rubromaculata*). Trichoptera: 1 Caddis case (sand). Diptera: 27 Chironomid larvæ. Lepidoptera: 1 Lepidopterous larva. Hymenoptera: 1 Sawfly (Tenthredinidæ), 2 Bees (? gen. et sp.), 1 Ant (*Polyrachis* sp.), 3 winged ants (? gen. et sp.). Crustacea: Claw of small Yabbie (*Parachœraps bicarinatus*). Miscellaneous: Vegetable matter. Large quantity of Algæ. *Note*: Scale readings by Dr. A. J. Spiller Brandon showed: Age, 3½ years. Length, 1st year, 4½ inches; 2nd year, 11 inches; 3rd year, 13 inches; 3¼ year, 13¼ inches. Spawned in 3rd year.

No. 2.—? sex, 1 lb.; 13 November, 1935, 12 (noon). Collected by Mr. H. Clode. Fly: Anderson's Brown Spinner. Coleoptera: 2 Scarabæid beetles (*Xyloryctus montanus*). Ephemeroptera: 36 Mayfly nymphs. Odonata: 1 Zygopterid dragonfly nymph. Diptera: 27 Chironomid larvæ. Arachnida: 1 spider (? *Araneus* sp.). Miscellaneous: Small quantity of broken insect remains. *Note*: Scale readings showed: Age, 2½ years. Length: 1st year, 7 inches; 2nd year, 11 inches; 2¼ year, 12 inches. Not spawned.

No. 3.—? sex, 11 oz.; 13 November, 1935, 12 (noon). Collected by Mr. H. Clode. Fly: Anderson's Brown Spinner. Coleoptera: 1 Click beetle (Elateridæ—? gen. et sp.). Trichoptera: 4 Caddis cases (sand). Ephemeroptera: 2 Mayfly nymphs. Odonata: 3 Anisopterid nymphs, 1 Zygopterid dragonfly (imago) (? gen. et sp.). Crustacea: 1 small Yabbie claw (*Parachœraps bicarinatus*). Miscellaneous: Small quantity of unidentifiable insect remains. Vegetable matter: Several long grass-stems. *Note*: Scale readings showed: Age, 2¼ years. Length: 1st year, 4½ inches; 2nd year, 10¼ inches; 2¼ year, 11 inches. Not spawned.

No. 4.—? sex, 10 oz.; 13 November, 1935, 10 a.m. Collected by Mr. H. Clode. Fly: Anderson's Brown Spinner. Coleoptera: 1 Pumpkin beetle (*Ceratia hilaris*), remains of an unidentifiable beetle. Trichoptera: 1 Caddis case (sand). Miscellaneous: A small quantity of finely broken insect remains. *Note*: Scale readings showed: Age, 2½ years. Length: 1st year, 6 inches; 2nd year, 10 inches; 2¼ year, 10¼ inches. Not spawned.

No. 5.—? sex, ½ lb.; 13 November, 1935, 10 a.m. Collected by Mr. H. Clode. Fly: Anderson's Brown Spinner. Coleoptera: 2 small Dytiscid beetles (? gen. et sp.), remains of large unidentifiable beetle. Trichoptera: 5 Caddis cases (sand). Diptera: 22 Chironomid larvæ. Crustacea: 2 Copepods (? gen. et sp.). *Note*: Scale readings showed: Age 2¼ years. Length: 1st year, 4 inches; 2nd year, 8½ inches; 2¼ year, 9½ inches. Not spawned.

No. 6.—? sex, ¾ lb.; 13 November, 1935. Collected by Mr. J. Teasey. Fly: R.A.B. Coleoptera: 1 Dytiscid beetle (? gen. et sp.). Diptera: 4 Chironomid larvæ. *Note*: Scale readings showed: Age, 2¼ years. Length, 1st year, 4 inches; 2nd year, 10 inches; 2¼ year, 11¼ inches. Not spawned.

No. 7.—? sex, ½ lb.; 13 November, 1935. Collected by Mr. J. Teasey. Fly: Cochybondu. Coleoptera: 1 *Telephorus pulchellus*. Trichoptera: 1 Caddis

case (sand). Ephemeroptera: 1 Mayfly nymph. Odonata: 2 Anisopterid nymphs (1 *Æschna*, 1 *Libellula*). Diptera: 5 Chironomid larvæ. *Note*: Scale readings showed: Age 2¼ years. Length: 1st year, 5 inches; 2nd year, 9½ inches; 2¼ year, 10 inches. Not spawned.

No. 8.—? sex, ¾ lb.; 13 November, 1935, 3 p.m. Collected by Dr. C. Anderson. Fly: Soldier Palmer. Coleoptera: 2 *Paropsis* sp., 6 Scarabæid beetles (*Heteronyx* sp.), remains of Cistelid beetle. Trichoptera: 2 Caddis flies (? gen. et sp.). Ephemeroptera: 2 Mayfly nymphs. Diptera: 15 Chironomid larvæ, 1 *Bibio* sp. Hymenoptera: 1 Ant (*Iridomyrmex rufoniger*). Crustacea: 1 small Yabbie (*Parachæraps bicarinatus*), 1 Copepod (? gen. et sp.). Miscellaneous insects: Small quantity broken insect remains. *Note*: Scale readings showed: Age, 2½ years. Length: 1st year, 6 inches; 2nd year, 10 inches; 2¼ year, 10¼ inches. Not spawned.

No. 9.—? sex, ? weight; 14 November, 1935. Collected by Mr. H. Clode: Fly: R.A.B. Coleoptera: 3 Click beetles (Elateridæ—? gen. et sp.), 3 small beetles (unidentifiable). Ephemeroptera: 8 Mayflies (? gen. et sp.). Diptera: 1 Bombyliid fly (? gen. et sp.). Miscellaneous insects: Quantity of finely triturated and unidentifiable insect remains.

No. 10.—? sex, ? weight; 14 November, 1935. Collected by Mr. H. Clode. Coleoptera: 1 Ladybird beetle (*Leis conformis*). Trichoptera: 30 Caddis cases (sand). Ephemeroptera: 2 Mayfly nymphs, 1 imago. Diptera: 4 Chironomid midges, and quantity of pupal skins. Miscellaneous insects: Small quantity of broken insect remains.

No. 11.—? sex, ? weight; 14 November, 1935. Collected by Mr. H. Clode. Fly: R.A.B. Trichoptera: 63 Caddis cases (sand). Ephemeroptera: 1 Mayfly. Lepidoptera: 2 small moths (? gen. et sp.). Miscellaneous insects: Small quantity of unidentifiable remains.

No. 12.—? sex, ? weight; 14 November, 1935. Collected by Mr. H. Clode. Fly: R.A.B. Coleoptera: 1 Click beetle (Elateridæ—? gen. et sp.), 1 Soldier beetle (*Telephorus pulchellus*). Trichoptera: 9 Caddis cases (sand). Lepidoptera: 1 small moth (unidentifiable). Diptera: 5 Chironomid midges. Hymenoptera: 2 winged ants (? *Iridomyrmex*). Miscellaneous insects: Quantity insect remains.

No. 13.—? sex, ? weight; 14 November, 1935. Collected by Mr. H. Clode. Fly: R.A.B. Coleoptera: 2 Scarabæid beetles (*Heteronyx* sp.). Trichoptera: 25 Caddis cases (sand). Ephemeroptera: 1 Mayfly nymph. Odonata: 1 Anisopterid nymph. Diptera: 11 Chironomid midges. Hymenoptera: 1 Ichneumon wasp (? gen. et sp.), 1 Ant (*Iridomyrmex rufoniger*). Miscellaneous insects: Quantity of unidentifiable insect remains.

No. 14.—? sex, 1 lb.; 14 November, 1935. Collected by Mr. H. Clode. Fly: Coachman. Coleoptera: 1 Scarabæid beetle (*Heteronyx* sp.), 1 Soldier beetle (*Telephorus pulchellus*). Odonata: 1 Anisopterid nymph. Diptera: 57 Chironomid larvæ, 1 Bibionid fly. Miscellaneous insects: Quantity of broken remains.

No. 15.—? sex, ? weight; 15 November, 1935. Collected by Dr. C. Anderson. Coleoptera: 1 Dryopid beetle (? gen. et sp.). *Note*: Scale reading shows: Age, 2¼ years. Length: 1st year, 3 inches; 2nd year, 10 inches; 2¼ year, 11 inches. Not spawned.

No. 16.—? sex, ? weight; 15 November, 1935. Collected by Dr. C. Anderson. Coleoptera: 1 Scarabæid beetle (*Heteronyx* sp.), 1 Click beetle (Elateridæ—? gen. et sp.). Trichoptera: 10 Caddis cases (sand). Odonata: 2 Anisopterid nymphs. *Note*: Scale reading shows: Age, 2¼ years. Length: 1st year, 3 inches; 2nd year, 10 inches; 2¼ year, 11¼ inches. Not spawned.

No. 17.—♀, 1½ lb.; 15 November, 1935. Collected by Mr. H. Clode. Fly: Brown Hopper Hackle. Coleoptera: 2 Ladybird beetles (*Leis conformis*), 1 *Paropsis* sp., 4 Scarabæid beetles (*Xyloryctus monticola*). Odonata: 6 Anisopterid nymphs. Orthoptera: 1 Grasshopper (? gen. et sp.). Miscellaneous insects: Small quantity of triturated remains. Vegetable matter: Quantity of grass. *Note*: Scale reading shows: Age, 3¼ years. Length: 1st year, 6½ inches; 2nd year, 11 inches; 3rd year, 13¼ inches; 3¼ year, 14¼ inches. Spawned in 3rd year.

No. 18.—♂, 14 oz.; 11 December, 1935. Collected by Mr. G. H. Montgomery. Fly: Hardy's Favourite. Coleoptera: 1 *Paropsis* sp., 3 Scarabæid beetles (*Heteronyx* sp.), 2 *Diphucephala* sp., 1 small Elaterid (? gen. et sp.). Trichoptera: 19 Caddis cases (sand). Orthoptera: 1 Grasshopper (? gen. et sp.). Crustacea: 1 small Yabbie (*Parachœraps bicarinatus*). Miscellaneous insects: Quantity of unidentifiable remains.

No. 19.—♀, 10 oz.; 12 December, 1935. Collected by Mr. G. H. Montgomery. Fly: Silver Doctor. Coleoptera: 3 Scarabæid beetles (*Heteronyx* sp.). Trichoptera: 3 Caddis cases (sand). Ephemeroptera: 4 Mayflies and wings of many others. Odonata: Wings of Anisopterid dragonflies. Miscellaneous insects: Small quantity of remains.

No. 20.—♀, 12 oz.; 12 December, 1935. Collected by Mr. G. H. Montgomery. Fly: Royal Coachman. Coleoptera: 7 Scarabæid beetles (*Heteronyx* sp.), 12 *Diphucephala* sp., and remains of many others. Miscellaneous insects: Quantity of finely broken insect remains.

No. 21.—♂, 1 lb.; 12 December, 1935. Collected by Mr. G. H. Montgomery. Fly: Red Tag Palmer. Coleoptera: 1 small Click beetle (Elateridæ—? gen. et sp.). Trichoptera: 25 Caddis cases (sand). Crustacea: 1 small Yabbie (*Parachœraps bicarinatus*).

No. 22.—♀, 9 oz.; 12 December, 1935. Collected by Mr. G. H. Montgomery. Fly: Coachman. Coleoptera: 5 *Heteronyx* sp., 1 *Diphucephala* sp., 1 Elaterid (? gen. et sp.), 1 *Cisseis maculata* (?). Ephemeroptera: 1 Mayfly. Isoptera: 1 winged Termite. Miscellaneous insects: Small quantity of unidentifiable remains.

No. 23.—♀, 8 oz.; 14 December, 1935. Collected by Mr. G. H. Montgomery. Fly: Ginger Palmer. Coleoptera: 1 *Diphucephala* sp., 1 small Click beetle (Elateridæ—? gen. et sp.). Trichoptera: 1 Caddis case (sand). Ephemeroptera: 1 Mayfly nymph.

No. 24.—♂, 9 oz.; 14 December, 1935. Collected by Mr. G. H. Montgomery. Fly: Zulu. Trichoptera: 18 Caddis cases (sand).

No. 25.—♀, 10 oz.; 14 December, 1935. Collected by Mr. G. H. Montgomery. Fly: Zulu. Coleoptera: 1 *Heteronyx* sp. Trichoptera: 54 Caddis cases (sand).

No. 26.—♀, 10 oz.; 15 December, 1935. Collected by Mr. G. H. Montgomery. Fly: Red Tag Palmer. Ephemeroptera: 4 Mayfly nymphs. Odonata: 1 Anisopterid nymph. Lepidoptera: 3 moths (? gen. et sp.). Myriapoda: 1 large millepede.

No. 27.—♂, 8 oz.; 15 December, 1935. Collected by Mr. G. H. Montgomery. Fly: Zulu. Trichoptera: 3 Caddis cases (stick). Odonata: 1 Anisopterid dragonfly and quantity of wings, 1 Anisopterid nymph, wings of Zygopterid dragonflies. Lepidoptera: 1 moth (unidentifiable). Miscellaneous insects: Small quantity of broken remains.

No. 28.—♀, 8 oz.; 15 December, 1935. Collected by Mr. G. H. Montgomery. Fly: Coachman. Trichoptera: 37 Caddis cases (sand). Hymenoptera: 1 Ichneumon wasp (? gen. et sp.). Crustacea: 68 Copepods (? Gammaridæ).

No. 29.—♀, 10 oz.; 15 December, 1935. Collected by Mr. G. H. Montgomery. Fly: Hardy's Favourite. Trichoptera: 33 Caddis cases (sand). Odonata: 1 Anisopterid nymph.

No. 30.—♂, 18 oz.; 18 December, 1935. Collected by Mr. G. H. Montgomery. Fly: Tomalla Hackle. Coleoptera: 2 *Diphucephala* sp., 2 Chrysomelid beetles (? gen. et sp.), 9 Scarabæid beetles (*Heteronyx* sp.), 2 small Click beetles (Elateridæ —? gen. et sp.). Trichoptera: 7 Caddis cases (stick). Ephemeroptera: 2 Mayflies and wings of others. Odonata: Wings of Zygopterid dragonflies. Hymenoptera: 7 winged ants (*Iridomyrmex* sp.), 1 worker ant (*Iridomyrmex rufoniger*). Miscellaneous insects: Large quantity of finely broken and unidentifiable remains.

No. 31.—♀, 10 oz.; 17 December, 1935. Collected by Mr. G. H. Montgomery. Fly: Coachman. Stomach empty.

No. 32.—♀, 14 oz.; 16 December, 1935. Collected by Mr. G. H. Montgomery. Fly: Zulu. Coleoptera: 1 Soldier beetle (*Telephorus pulchellus*), 1 small Elaterid. Trichoptera: 2 Caddis cases (sand), 7 Mayfly nymphs. Amphibia: Bones of a small frog and quantity of frog ova. Miscellaneous: Vegetable matter, a small quantity.

No. 33.—♂, 14 oz.; 16 December, 1935. Collected by Mr. G. H. Montgomery. Fly: Hardy's Favourite. Coleoptera: 4 *Heteronyx* sp. Trichoptera: 4 Caddis cases (sand). Ephemeroptera: 3 Mayflies and quantity of wings. Odonata: 1 Anisopterid nymph. Vermes: 2 Gordian worms. Crustacea: 1 small Yabbie (*Parachœraps bicarinatus.*)

No. 34.—♀, 20 oz.; 16 December, 1935. Collected by Mr. G. H. Montgomery. Fly: Hare's Ear. Coleoptera: Remains of large Scarabæid beetle (? *Anoplognathus*), 1 *Paropsis* larva. Trichoptera: 2 Caddis cases (sand). Miscellaneous: 1 feather.

No. 35.—♀, 10 oz.; 16 December, 1935. Collected by Mr. G. H. Montgomery. Fly: Palmer. Trichoptera: 27 Caddis cases (sand). Crustacea: 23 Copepods (? Gammaridæ).

Summary of Food of Rainbow Trout, Barrington River.

Stomachs examined	35
Coleoptera	114
Trichoptera	328
Ephemeroptera	76
Lepidoptera	8
Hemiptera	1
Hymenoptera	21
Diptera	180
Odonata	22

Orthoptera	2
Isoptera	1
Arachnida	1
Myriapoda	1
Vermes	3
Crustacea	100
Amphibia	1

McLaughlin River.

No. 36.—♀, 2 lb.; 13 October, 1935, 11 a.m. Collected by Mr. F. W. Barrett. Fly: Jungle Cock. Coleoptera: 250 small Dytiscid beetles (*Necterosoma penicillata*), 2 small Dytiscid beetles (? gen. et sp.), and a quantity of unidentifiable Coleopterous remains. Hemiptera: 9 *Corixa* sp. Diptera: 2 *Conops* sp. (Cyrtidæ). Trichoptera: 1 Caddis larva.

No. 37.—♂, 2 lb.; 13 October, 1935, 9.30 a.m. Collected by Mr. F. W. Barrett. Fly: Jungle Cock. Coleoptera: 203 small Dytiscid beetles (*Necterosoma penicillata*), 2 Dung-beetles (*Onthophagus* sp.), 1 small Carab beetle (? gen. et sp.). Trichoptera: 4 Caddis cases (sand). Ephemeroptera: 25 Mayfly nymphs, 3 Mayflies. Lepidoptera: 6 small moths (? gen. et sp.), 1 Lepidopterous larva. Diptera: 5 Stratiomyiid larvæ (*Odontomyia*), 3 Mycetophyllid midges. Hymenoptera: 1 Greenhead ant (*Chalcoponera metallica*). Hemiptera: 9 *Corixa* sp. Orthoptera: 4 Grasshoppers (*Paratettix* sp.). Miscellaneous insects: Large quantity of unidentifiable remains. Crustacea: 1 Shrimp (*Paratya australiensis*). Vegetable matter: Large quantity of Algæ.

No. 38.—♀, 3½ lb.; 13 October, 1935, 9.30 a.m. Collected by Mr. F. W. Barrett. Fly: Jungle Cock. Coleoptera: 320 small Dytiscid beetles (*Necterosoma penicillata*). Diptera: 6 Stratiomyiid larvæ (*Odontomyia*). Miscellaneous: Quantity of mud.

No. 39.—♀, 2¾ lb.; 14 October, 1935, 5 p.m. Collected by Mr. F. W. Barrett. Coleoptera: 9 Coleopterous larvæ, remains of a Scarabæid beetle, 2 small Dytiscid beetles (*Necterosoma penicillata*). Odonata: 4 Anisopterid nymphs. Amphibia: Bones of a small frog. Miscellaneous: Quantity of mud.

No. 40.—♀, 2¼ lb.; 15 October, 1935, 6 p.m. Collected by Mr. F. W. Barrett. Coleoptera: 1 Carab beetle (? gen. et sp.), 90 small Dytiscid beetles (*Necterosoma penicillata*), 2 Coleopterous larvæ, 1 large Hydrophylid larva. Trichoptera: 1 Caddis case (stick). Ephemeroptera: 1 large Mayfly nymph. Miscellaneous: 2 pebbles. Vegetable matter: A very large quantity of Algæ.

No. 41.—♀, 3 lb.; 16 October, 1935, 12 (noon). Collected by Mr. F. W. Barrett. Coleoptera: 2 large Hydrophylid larvæ, 2 Gyrinid beetles (? gen. et sp.), 1 small Dytiscid beetle (? gen. et sp.), 35 small Dytiscid beetles (*Necterosoma penicillata*), 3 Coleopterous larvæ. Ephemeroptera: 34 Mayfly nymphs. Odonata: 2 Anisopterid nymphs. Diptera: 5 Stratiomyiid larvæ (*Odontomyia*), 52 Syrphid larvæ. Hemiptera: 23 *Corixa* sp. Orthoptera: Forceps of an Earwig (? *Labidura riparia*). Miscellaneous insects: Large quantity of finely broken and unidentifiable remains.

No. 42.—♂, 2¼ lb.; 16 October, 1935, 6.30 p.m. Collected by Mr. F. W. Barrett. Coleoptera: 26 small Dytiscid beetles (*Necterosoma penicillata*), 1 Weevil (? gen. et sp.), 1 small Carab beetle (? gen. et sp.). Trichoptera: 1 Caddis larva. Arachnida: 1 Spider (*Lycosa* sp.). Vegetable matter: Large quantity of Algæ.

No. 43.—♀, 2¼ lb.; 16 October, 1935, 10.30 a.m. Collected by Mr. F. W. Barrett. Coleoptera: 63 small Dytiscid beetles (*Necterosoma penicillata*), 7 large Hydrophilid larvæ, 3 small Carab beetles (? gen. et sp.). Ephemeroptera: 17 Mayflies. Perlaria: 18 Stoneflies (*Eusthenia* sp.). Lepidoptera: 1 moth (? gen. et sp.). Diptera: 18 Stratiomyiid larvæ (*Odontomyia*), 21 Syrphid larvæ, 1 Dipterous insect. Orthoptera: 1 Grasshopper (*Paratettix* sp.), forceps of Earwig (*Labidura riparia*). Miscellaneous insects: Large quanttiy of unidentifiable remains. Arachnida: 2 Spiders (*Lycosa* sp.). Vegetable matter: Mass of Algæ.

No. 44.—♀, 2¾ lb.; 17 October, 1935, 5 p.m.—Collected by Mr. F. W. Barrett. Fly: Special Jungle Cock. Trichoptera: 1 Caddis case (sand). Perlaria: 30 Stoneflies and nymphs (*Eusthenia* sp.). Hemiptera: 2 small *Corixa* sp. Amphibia: 1 Frog.

No. 45.—♂, 2¾ lb.; 18 October, 1935, 2.30 p.m. Collected by Mr. F. W. Barrett. Fly: Special Jungle Cock. Coleoptera: 3 large Hydrophilid larvæ, 7 small Dytiscid beetles (*Necterosoma penicillata*), 2 small Carab beetles (? gen. et sp.), 1 Dytiscid beetle (? gen. et sp.). Ephemeroptera: 13 Mayflies and remains of many others. Lepidoptera: 2 small moths (unidentifiable). Diptera: 3 Dipterous pupæ (? Tipulidæ), 5 Stratiomyiid larvæ (*Odontomyia*). Hemiptera: 2 *Corixa* sp. Orthoptera: 1 Grasshopper (*Paratettix* sp.), 1 Cockroach (*Panesthia granicollis*). Miscellaneous insects: Small quantity of broken remains. Vermes: Remains of a worm (unidentifiable). Amphibia: Bones of a small frog.

No. 46.—♂, 3½ lb.; 18 October, 1935, 3.30 p.m. Collected by Mr. F. W. Barrett. Fly: Special Jungle Cock. Coleoptera: 5 small Carab beetles (? gen. et sp.), 5 large Hydrophylid larvæ, 1 Dryopid larva, 1 Click beetle (Elateridæ—? gen. et sp.), 8 small Dytiscid beetles (*Necterosoma penicillata*), 1 Coleopterous larva. Trichoptera: 1 Caddis case (stick). Ephemeroptera: 68 large Mayflies and considerable quantity of remains. Odonata: 5 Anisopterid nymphs. Lepidoptera: 1 moth (? gen. et sp.). Diptera: 6 Stratiomyiid larvæ (*Odontomyia*), 14 Dipterous pupæ (? Stratiomyiidæ). Hymenoptera: 1 winged ant (? gen. et sp.), 1 Hive Bee (*Apis mellifera*), 1 Ichneumon wasp (? gen. et sp.). Orthoptera: 3 Grasshoppers (*Paratettix* sp.), 1 Cockroach (*Panesthia granicollis*). Miscellaneous insects: Large quantity of unidentifiable remains. Arachnida: Cephalothorax and chelicerae of Spider (*Lycosa* sp.). Amphibia: Mass of ova (? frog).

No. 47.—♀, 3 lb.; 18 October, 1935, 10.30 a.m. Collected by Mr. F. W. Barrett. Fly: Special Jungle Cock. Coleoptera: 1 large Hydrophilid larva, 1 small Dytiscid beetle (*Nectosoma penicillata*). Odonata: 2 Anisopterid nymphs. Lepidoptera: 1 small moth (? gen. et sp.). Hemiptera: 1 *Corixa* sp.

No. 48.—♂, ? weight; 11 November, 1935. Collected by Mr. Jas. Gaden. Fly: Claret and Mallard. Coleoptera: 117 small Dytiscid beetles (*Necterosoma penicillata*). Odonata: 1 Anisopterid nymph. Arachnida: 1 Spider (*Araneus* sp.).

No. 49.—♀, ? weight; 10 November, 1935, 4 p.m. Collected by Mr. Jas. Gaden. Fly: Claret and Mallard. Coleoptera: 16 small Dytiscid beetles (*Necterosoma penicillata*).

No. 50.—♀, ? weight; 11 November, 1935, 12.30 p.m. Collected by Mr. Jas. Gaden. Fly: Claret and Mallard. Coleoptera: 17 small Dytiscid beetles (*Necterosoma penicillata*). Diptera: 5 Chironomid pupæ.

No. 51.—♀, ? weight; 11 November, 1935, 2.20 p.m. Collected by Mr. Jas. Gaden. Amphibia: Remains of a frog.

No. 52.—♀, ? weight; 11 November, 1935, 3.30 p.m. Collected by Mr. Jas. Gaden. Coleoptera: 2 small Dytiscid beetles (*Necterosoma penicillata*).

No. 53.—♀, ? weight; 11 November, 1935, 4 p.m. Collected by Mr. Jas. Gaden. Stomach empty.

No. 54.—♂, 3 lb.; 1 December, 1935, 11 a.m. Collected by Mr. Walter Forbes. Coleoptera: 1 Gyrinid beetle (? gen. et sp.). Ephemeroptera: 4 Mayfly nymphs. Diptera: 6 Stratiomyiid larvæ (*Odontomyia*). Hemiptera: 1 *Corixa* sp. Miscellaneous insects: Quantity of unidentifiable remains. Amphibia: 3 Frogs. Pisces: 3 small fish fry (much digested). *Note*: It proved impossible to identify these fry, but they were not those of trout.

No. 55.—♀, 2½ lb.; 2 December, 1935, 3 p.m. Collected by Mr. Walter Forbes. Fly: Large Jungle Cock. Coleoptera: 28 small Dytiscid beetles (*Necterosoma penicillata*). Trichoptera: 2 Caddis cases (sand). Ephemeroptera: Wings of Mayflies. Diptera: 73 Chironomid pupæ. Hemiptera: 1 *Notonecta* sp. Orthoptera: 2 Earwigs (*Labidura riparia*). Pisces: 7 fish fry (much digested). Vegetable matter: 1 large piece of bark, 3 inches long. *Note*: The fish fry were definitely not trout.

No. 56.—♀, 3 lb. 4 oz.; 3 December, 1935, 11.40 a.m. Collected by Mr. Walter Forbes. Fly: Jungle Cock. Pisces: 66 fish fry and large quantity of remains (much digested). *Note*: The fish fry, although unidentifiable, were not those of trout.

No. 57.—♀, 2½ lb.; 4 December, 1935, 11 a.m. Collected by Mr. Walter Forbes. Stomach empty.

No. 58.—♂, 2 lb. 14 oz.; 4 December, 1935, 2 p.m. Collected by Mr. Walter Forbes. Fly: Jungle Cock. Coleoptera: 23 small Dytiscid beetles (*Necterosoma penicillata*). Lepidoptera: 4 moths (unidentifiable). Diptera: 1 Tipulid (*Macromastyx costalis*), 1 Stratiomyiid fly (? gen. et sp.). Hemiptera: 1 *Corixa* sp. Miscellaneous insects: Quantity of unidentifiable insect remains. Arachnida: 1 Spider (*Araneus* sp.). Vegetable matter: A very large quantity of Algæ.

No. 59.—♂, 1¾ lb.; 4 December, 1935, 6 p.m. Collected by Mr. Walter Forbes. Fly: Ginger Hackle and Red. Coleoptera: 2 small Dytiscid beetles (*Necterosoma penicillata*).

No. 60.—♀, 2½ lb.; 6 December, 1935, 11.15 a.m. Collected by Mr. L. Forbes. Fly: Jungle Cock. Ephemeroptera: 5 Mayfly nymphs. Hemiptera: 57 small *Corixa* sp.

No. 61.—♀, 3¼ lb.; 17 January, 1936, 10 a.m. Collected by Dr. A. Glen. Odonata: 1 Zygopterid dragonfly nymph. Hemiptera: 1 *Notonecta* sp., 1 *Corixa* sp.

No. 62.—♀, 3¾ lb.; 17 January, 1936, 11 a.m. Collected by Dr. A. Glen. Fly: Jungle Cock. Trichoptera: 2 Caddis cases (sand). Odonata: 2 Zygopterid nymphs. Hemiptera: 2 *Corixa* sp., 1 *Notonecta* sp.

No. 63.—♂, 3¼ lb.; 17 January, 1936, 12.30 p.m.—Collected by Dr. A. Glen. Fly: Jungle Cock. Stomach empty.

No. 64.—♀, 3¼ lb.; 17 January, 1936, 1 p.m. Collected by Dr. A. Glen. Coleoptera: 8 small Dytiscid beetles (*Necterosoma penicillata*). Trichoptera: 3 Caddis cases (sand). Diptera: 3 Stratiomyiid larvæ (*Odontomyia*). Pisces: 1 fish egg (?). Miscellaneous: 2 pebbles. Vegetable matter: Small quantity of Algæ.

No. 65.—♀, ? weight; 18 January, 1936, 3.15 p.m. Collected by Dr. A. Glen. Coleoptera: 64 small Dytiscid beetles (*Necterosoma penicillata*). Trichoptera: 3 Caddis cases (sand). Hemiptera: 5 small *Corixa* sp. Vegetable matter: Small quantity of Algæ.

No. 66.—♀, ? weight; 18 January, 1936, 4 p.m. Collected by Dr. A. Glen. Fly: Jungle Cock. Coleoptera: 6 small Dytiscid beetles (*Necterosoma penicillata*). Trichoptera: 3 Caddis cases (stick), 1 Caddis case (sand). Hemiptera: 1 *Corixa* sp. Vegetable matter: Large quantity of Algæ.

No. 67.—♀, 2¼ lb.; 11 April, 1936, 1.15 p.m. Collected by Dr. A. Glen. Fly: Jungle Cock. Coleoptera: 6 small Dytiscid beetles (*Necterosoma penicillata*). Trichoptera: 2 Caddis cases (stick)—large, 1½ inches long. Hemiptera: 13 small *Corixa* sp. Arachnida: 1 Spider (*Araneus* sp.).

No. 68.—♀, 2¼ lb.; 11 April, 1936, 2 p.m. Collected by Dr. A. Glen. Coleoptera: 8 small Dytiscid beetles (*Necterosoma penicillata*), 2 Hydrophilid beetles (? gen. et sp.). Hemiptera: 1 small *Corixa* sp. Vegetable matter: Quantity of Algæ.

No. 69.—♂, 1¼ lb.; 11 April, 1936, 3 p.m. Collected by Mr. F. W. Barrett. Coleoptera: 1 small Dytiscid beetle (*Necterosoma penicillata*). Hemiptera: 1 small *Corixa* sp.

No. 70—♀, 1½ lb.; 11 April, 1936, 3.45 p.m. Collected by Mr. Jas. Gaden. Diptera: 46 Chironomid pupæ. Hemiptera: 127 small *Corixa* sp., 1 large *Corixa* sp. Miscellaneous: Quantity of mud.

No. 71.—♀, 3¼ lb.; 11 April, 1936, 4 p.m. Collected by Mr. Jas. Gaden. Coleoptera: 7 small Dytiscid beetles (*Necterosoma penicillata*). Trichoptera: 2 Caddis cases (sand). Diptera: 8 Chironomid pupæ. Hemiptera: 37 small *Corixa* sp., 1 large *Corixa* sp., 4 *Notonecta* sp. Vermes: 1 Gordian worm. Miscellaneous: Quantity of mud.

No. 72.—♀, 1½ lb.; 11 April, 1936, 4.15 p.m. Collected by Mr. Jas. Gaden. Hemiptera: 4 small *Corixa* sp.

Summary of Food of Rainbow Trout, McLaughlin River.

Stomachs examined	37
Coleoptera	1,377
Trichoptera	27
Ephemeroptera	170
Lepidoptera	15
Hemiptera	305
Hymenoptera	4
Diptera	283
Odonata	18
Orthoptera	14
Perlaria	48
Arachnida	7
Vermes	2
Crustacea	1
Amphibia	8
Pisces	77

Kybean River.

No. 73.—♀, 1¼ lb.; 6 November, 1935, 11 a.m. Collected by Dr. A. J. Spiller Brandon. Coleoptera: 7 Coleopterous larvæ, 1 beetle (unidentifiable). Trichoptera: 86 Caddis cases (84 sand, 2 stick). Miscellaneous insects: Large quantity of finely broken remains. Amphibia: 1 frog.

No. 74.—♂, 2½ lb.; 6 November, 1935, 12.30 p.m. Collected by Dr. B. Craig. Coleoptera: 1 Scarabæid beetle (*Heteronyx* sp.). Trichoptera: 675 Caddis cases (sand). Odonata: 1 Zygopterid dragonfly. Miscellaneous insects: Quantity of remains. Arachnida: 1 Spider (? *Araneus* sp.). Amphibia: Bones of a frog. Vegetable matter: Blades of grass.

No. 75.—♂, 2 lb.; 6 November, 1935, 5 p.m. Collected by Dr. B. Craig. Trichoptera: 1,256 Caddis cases (sand), 2 Caddis cases (stick). Odonata: 1 Anisopterid nymph.

Summary of Food of Rainbow Trout, Kybean River.

Stomachs examined	3
Coleoptera	9
Trichoptera	2,019
Odonata	2
Arachnida	1
Amphibia	2

Big Badja River.

No. 76.—♂, 1¾ lb.; 1 October, 1935. Collected by Rev. W. A. Evans. Trichoptera: 1 Caddis case (stick). Odonata: 1 Anisopterid nymph.

No. 77.—♀, 1¼ lb.; 2 October, 1935. Collected by Rev. W. A. Evans. Amphibia: 6 frogs.

No. 78.—♀, 1lb .; 5 October, 1935 (Countegany Creek). Collected by Mr. F. W. Barrett. Coleoptera: 1 Click beetle (Elateridæ—? gen. et sp.). Trichoptera: 2 Caddis cases (stick). Miscellaneous: 3 quartz pebbles.

No. 79.—♀, 1¾ lb.; 19 October, 1935. Collected by Rev. W. A. Evans. Trichoptera: 3 Caddis cases (stick). Vegetable matter: Mass of roots.

No. 80.—♀, 2 lb.; 19 October, 1935. Collected by Rev. W. A. Evans. Trichoptera: 7 Caddis cases (sand), 8 Caddis cases (stick). Diptera: 1 Dipterous larva (? Stratiomyidæ).

No. 81.—♂, 2 lb.; 26 January, 1936. Collected by Rev. W. A. Evans. Coleoptera: 1 Scarabæid beetle (? gen. et sp.). Trichoptera: 1 Caddis case (stick). Odonata: 37 Zygopterid dragonflies, 1 Anisopterid dragonfly (imagines). Crustacea: 1 Shrimp (*Paratya australiensis*).

Summary of Food of Rainbow Trout, Badja River.

Stomachs examined	6
Coleoptera	2
Trichoptera	22
Diptera	1
Odonata	39
Crustacea	1
Amphibia	6

Numeralla River.

No. 82.—♀, 1½ lb.; 2 October, 1935. Collected by Rev. W. A. Evans. Coleoptera: 2 small Dytiscid beetles (*Necterosoma penicillata*). Trichoptera: 4 Caddis cases (sand). Diptera: 5 Mycetophyllid midges. Isoptera: 3 winged Termites.

Gungarlin River (Tributary of Snowy).

No. 83.—♀, 1¾ lb.; 16 December, 1935. Collected by Mr. R. J. Jenner. Fly: Red Lochardie, No. 3. Amphibia: 1 frog.

No. 84.—♀, 1¾ lb.; 17 December, 1935, 11 a.m. Collected by Mr. R. J. Jenner. Fly: Red Lochardie, No. 3. Coleoptera: 1 Scarabæid beetle (*Heteronyx* sp.), 1 Dynastid beetle (? gen. et sp.). Trichoptera: 10 Caddis cases (sand). Lepidoptera: 1 large moth (unidentifiable). Amphibia: 1 frog. Miscellaneous: Large feather.

Summary of Food of Rainbow Trout, Gungarlin River.

Stomachs examined	2
Coleoptera	2
Trichoptera	10
Lepidoptera	1

Tuross River.

No. 85.—♀, 1 lb.; 26 October, 1935, 1.30 p.m. Collected by Dr. Brown Craig. Trichoptera: 1 Caddis case (stick). Miscellaneous: Small quantity of sand.

No. 86.—♀, 1 lb.; 26 October, 1935, 1.30 p.m. Collected by Dr. Brown Craig. Coleoptera: 10 Elateridæ (? gen. et sp.), 1 Chrysomelid beetle, 1 Coleopterous larva, 3 Scarabæid beetles (*Heteronyx* sp.). Trichoptera: 5 Caddis cases (sand). Hymenoptera: 4 Thynnid wasps (3 ♂, 1 ♀). Miscellaneous insects: Quantity of unidentifiable remains.

No. 87.—♀, ¾ lb.; 30 October, 1935, 11.30 a.m. Collected by ?. Coleoptera: 1 Chrysomelid beetle (? gen. et sp.). Trichoptera: 26 Caddis cases (sand), 15 Caddis cases (stick). Miscellaneous insects: Small quantity of broken remains. Vegetable matter: Large quantity of unidentifiable vegetable remains.

No. 88.—♀, ¾ lb.; 30 October, 1935, 11.30 a.m. Collected by Dr. Brown Craig. Trichoptera: 14 Caddis cases (sand), 1 Caddis case (stick). Ephemeroptera: 2 Mayfly nymphs. Hymenoptera: 1 Thynnid wasp. Miscellaneous insects: Quantity of remains.

No. 89.—♀, 2 lb.; 30 October, 1935, 12.30 a.m. Collected by Dr. A. J. Spiller Brandon. Trichoptera: 4 Caddis cases (stick), 2 Caddis cases (sand). Ephemeroptera: 1 Mayfly nymph.

No. 90.—♀, ¾ lb.; 30 October, 1935, 3.30 p.m. Collected by Dr. Brown Craig. Trichoptera: 19 Caddis cases (sand), 2 Caddis cases (stick). Ephemeroptera: 2 Mayfly nymphs. Amphibia: Bones of a frog.

No. 91.—♀, 1¼ lb.; 31 October, 1935, 5 p.m. Collected by Mr. A. C. Ebsworth. Coleoptera: 1 *Paropsis* larva. Trichoptera: 8 Caddis cases (sand).

No. 92.—? sex, ? weight; 1 November, 1935, 5.15 p.m. Collected by Mr. A. C. Ebsworth. Coleoptera: 1 Scarabæid beetle (*Heteronyx* sp.). Trichoptera: 6 Caddis cases (stick), 7 Caddis cases (sand). Ephemeroptera: 1 Mayfly (imago), 1 Mayfly nymph.

No. 93.—? sex, ¾ lb.; 1 November, 1935, 5.30 p.m. Collected by Dr. Brown Craig. Coleoptera: 2 *Paropsis* spp., 4 Elateridæ (? gen. et spp.), 1 Longicorn beetle (unidentifiable), 1 Staphylinid beetle (*Cafius aureolatus*), 3 small Carab beetles (? gen. et sp.), 8 Chrysomelid beetles (? gen. et sp.), 1 Soldier beetle (*Telephorus pulchellus*), 40 *Heteronyx* sp. Trichoptera: 33 Caddis cases (sand), 2 Caddis-flies. Lepidoptera: 1 Lepidopterous larva. Hemiptera: 2 Pentatomid bugs (? gen. et sp.). Hymenoptera: 1 Thynnid wasp (♀), 1 Sawfly (? gen. et sp.), 1 wasp (unidentifiable), 2 flying Ants (? *Iridomyrmex*). Isoptera: 90 winged Termites and a very large quantity of wings. Thysanoptera: 1 *Idolothrips spectrum.* Miscellaneous insects: Very large quantity of finely broken and unidentifiable remains.

No. 94.—? sex, 1¼ lb.; 1 November, 1935, 6 p.m. Collected by Mr. A. C. Ebsworth. Coleoptera: Remains of an Elaterid, 10 *Heteronyx* sp., 1 *Paropsisterna octolineata*, 1 Chrysomelid beetle (? gen. et sp.), 2 small Carab beetles (? gen. et sp.), 2 *Cisseis* sp. (Buprestidæ). Hymenoptera: 1 Thynnid wasp (♀). Vermes: 1 Gordian worm. Vegetable matter: Stomach crammed with coarse unidentifiable vegetable matter.

No. 95.—? sex, ¾ lb.; 4 November, 1935, 5 p.m. Collected by Dr. Brown Craig. Coleoptera: 3 *Cryptocephalus* sp., 1 *Liparetrus* sp., 3 Soldier beetles (*Telephorus pulchellus*). Trichoptera: 3 Caddis cases (sand). Ephemeroptera: 1 Mayfly. Hemiptera: 6 Psyllids (Psyllidæ). Miscellaneous: Large quantity of mud.

No. 96.—♀, ¾ lb.; 7 November, 1935, 1 p.m. Collected by Mr. A. C. Ebsworth. Diptera: 1 Dipterous pupa. Amphibia: Bones of a small frog.

No. 97.—♀, ¾ lb.; 8 November, 1935, 12.30 p.m. Collected by Dr. Brown Craig. Trichoptera: 9 Caddis cases (sand). Ephemeroptera: 5 Mayflies. Odonata: 1 Zygopterid dragonfly (imago). Hymenoptera: 1 Thynnid wasp (♂), 1 Bee (? *Halictus* sp.). Diptera: 1 Mycetophyllid midge. Vegetable matter: Seed-vessel of a Eucalypt.

No. 98.—♀, 1 lb.; 8 November, 1935, 12 (noon). Collected by Mr. A. C. Ebsworth. Coleoptera: 2 Scarabæid beetles (*Heteronyx* sp.), 1 Carab beetle (? gen. et. sp.), 1 *Paropsis* sp., 1 Ladybird beetle (*Leis conformis*). Trichoptera: 7 Caddis cases (sand). Ephemeroptera: 2 Mayflies. Diptera: 1 small Asilid, 1 unidentifiable fly (? Asilid). Hymenoptera: 3 Thynnid wasps (1 ♂, 2 ♀). Miscellaneous insects: Small quantity of finely broken remains.

No. 99.—♀, 1 lb.; 22 December, 1935, 1 p.m. Collected by Dr. A. J. Spiller Brandon. Trichoptera: 5 Caddis cases (sand). Odonata: Wings of Zygopterid dragonflies.

No. 100.—♀, 1 lb.; 24 December, 1935, 1.30 p.m. Collected by Mr. W. H. Ifould. Coleoptera: 59 *Phyllotocus navicularis*, 23 Click beetles (Elateridæ—? gen. et spp.), 3 *Heteronyx* sp., 2 *Diphucephala* sp., 2 Soldier beetles (*Telephorus pulchellus*), 5 *Cryptocephala* sp., 1 Clerid beetle (? gen. et sp.), quantity of broken remains of Coleoptera. Hymenoptera: 3 Hive Bees (*Apis mellifera*), 2 native Bees (*Hylæus* sp.), 1 Bee (? gen. et sp.), 6 Thynnid wasps (2 ♂, 4 ♀), 1 Bee (*Halictus* sp.). Diptera: 1 Robber Fly (Asilidæ). Hemiptera: 1 Tree-hopper (? gen. et sp.).

No. 101.—? sex, 1¼ lb.; 24 December, 1935, 4 p.m. Collected by Mr. W. H. Ifould. Coleoptera: 28 Scarabæid beetles (*Phyllotocus navicularis*), 2 *Anoplognathus porosus*, 4 *Diphucephala* sp., 2 *Heteronyx* sp., 2 *Cryptocephalus* sp., 2 *Paropsis*

sp., 2 Chrysomelid beetles (? gen. et sp.), 2 Soldier beetles (*Telephorus pulchellus*), 9 Click beetles (Elateridæ—? gen. et spp.), 2 unidentifiable beetles (? Tenebrionidæ). Diptera: 1 Asilid fly (? gen. et sp.). Hymenoptera: 3 Thynnid wasps (2 ♂, 2 ♀), 1 Bee (*Euryglossa* sp.), 1 Ichneumon wasp (? gen. et sp.), 1 winged Ant (*Iridomyrmex* sp.). Mantispidæ: 1 Mantispid (? gen. et sp.). Miscellaneous insects: Large quantity of finely divided remains.

No. 102.—♀, 2 lb.; 28 December, 1935, 4 p.m. Collected by Mr. W. H. Ifould. Coleoptera: 1 Scarabæid beetle (*Heteronychus arator*), 5 *Phyllotocus navicularis*, 1 Click beetle (Elateridæ—? gen. et sp.). Trichoptera: 3 Caddis cases (stick). Hymenoptera: 1 Bee (*Halictus* sp.). Miscellaneous insects: Small quantity of remains.

No. 103.—♀, 1 lb.; 28 December, 1935, 4.30 p.m. Collected by Mr. W. H. Ifould. Coleoptera: 4 Click beetles (Elateridæ—? gen. et sp.), 8 Scarabæid beetles (*Phyllotocus navicularis*). Odonata: Wings of Zygopterid dragonflies. Lepidoptera: 1 moth (unidentifiable). Diptera: 1 Asilid fly (? gen. et sp.). Hemiptera: 1 *Corixa* sp. Miscellaneous insects: Quantity of broken and unidentifiable remains.

No. 104.—♀, 1 lb.; 18 January, 1936, 6 p.m. Collected by Dr. A. J. Spiller Brandon. Coleoptera: 1 *Anoplognathus porosus*, 4 *Phyllotocus navicularis*, 2 small Dytiscid beetles (*Necterosoma penicillata*), remains of unidentifiable beetle. Lepidoptera: 1 small moth (? gen. et sp.). Miscellaneous insect remains.

No. 105.—♀, ½ lb.; 18 January, 1936, 1.30 p.m. Collected by Dr. A. J. Spiller Brandon. Coleoptera: 9 *Diphucephala* sp., 1 *Cryptocephala* sp., 6 Elateridæ (? gen. et spp.), 4 *Anoplognathus porosus*, 2 *Melobasis* sp. (Buprestidæ), 1 *Stigmodera* sp. (Buprestidæ), 1 Clerid beetle (? gen. et sp.), 1 small Scarabæid beetle (? gen. et sp.), large quantity of Coleopterous remains. Thysanoptera: 8 *Idolothrips spectrum*. Miscellaneous insects: Quantity of remains. Arachnida: 1 Spider (? gen. et sp.). Vermes: 1 Gordian worm.

No. 106.—♀, 10 oz., 21 January, 1936, 12 (noon). Collected by Mr. J. Harnett. Coleoptera: 16 Scarabæid beetles (*Heteronyx* sp.), 1 *Anoplognathus porosus*. Trichoptera: 1 Caddis case (sand). Diptera: 1 Chironomid pupa.

No. 107.—♀, 1 lb.; 3 February, 1936, 11 a.m. Collected by Dr. A. J. Spiller Brandon. Coleoptera: 1 *Heteronyx* sp., 1 *Telura* sp. (Scarabæidæ). Trichoptera: 4 Caddis cases (sand). Hymenoptera: 1 large Sphecid wasp (? gen. et sp.). Miscellaneous insects: Quantity of broken remains.

No. 108.—♀, 1¾ lb.; 23 February, 1936, 6 p.m. Collected by Dr. A. J. Spiller Brandon. Coleoptera: 10 *Cryptocephalus* sp., 2 *Heteronyx* sp. Trichoptera: 3 Caddis cases (sand). Diptera: 53 Chironomid midges, 1 Crane fly (Tipulidæ—? gen. et sp.). Hemiptera: 2 Rutherglen bugs (*Nysius vinitor*), 10 Tree-hoppers (? gen. et sp.), 1 *Ledra* sp. Thysanoptera: 8 *Idolothrips spectrum*. Isoptera: 1 winged Termite. Miscellaneous insects: Large quantity of broken and unidentifiable remains, mostly those of Diptera and Hymenoptera.

Summary of Food of Rainbow Trout, Tuross River.

Stomachs examined	24
Coleoptera	340
Trichoptera	180
Ephemeroptera	15
Lepidoptera	3
Hemiptera	23

Hymenoptera	37
Diptera	62
Odonata	1
Isoptera	91
Thysanoptera	17
Mantispidæ	1
Arachnida	1
Vermes	2
Amphibia	2

General Summary of Food of Brown Trout.

Stomachs examined	73
Coleoptera	512
Trichoptera	1,501
Ephemeroptera	73
Lepidoptera	493
Hemiptera	114
Hymenoptera	116
Diptera	2,043
Odonata	110
Orthoptera	29
Isoptera	100
Perlaria	1
Thysanoptera	15
Arachnida	9
Myriapoda	15
Vermes	3
Crustacea	6
Mollusca	244
Amphibia	8

Stomach Contents of Brown Trout.

(*Salmo fario* Linnæus.)

Fish River, Oberon.

No. 1.—♂, 1¾ lb.; 27 October, 1935. Collected by Mr. W. Smith. Coleoptera: 1 Ladybird beetle (*Leis conformis*), elytron of beetle (unidentifiable).

No. 2.—♀, 1 lb.; 27 October, 1935. Collected by Mr. W. Smith. Coleoptera: 1 Elaterid (? gen. et sp.), 1 Ladybird beetle (*Leis conformis*), 1 Dryopid beetle (? gen. et sp.). Hymenoptera: 8 winged Ants (? *Iridomyrmex* sp.). Mollusca: 37 *Bullinus* sp., 1 *Planorbis* sp.

No. 3.—♀, 1 lb.; 27 October, 1935. Collected by Mr. W. Smith. Coleoptera: 10 Ladybird beetles (*Leis conformis*). Mollusca: 6 *Bullinus* sp.

No. 4.—♂, 1¾ lb.; 27 October, 1935, 6.30 a.m. Collected by Mr. W. Smith. Coleoptera: 5 Staphylinid beetles (*Cafius areolatus*), 10 Elateridæ (? gen. et spp.), 14 Ladybird beetles (*Leis conformis*), 1 Dung beetle (*Onthophagus* sp.), 3 small Carab beetles (? gen. et sp.). Hymenoptera: 4 winged ants (? gen. et sp.). Orthoptera: 1 Mole Cricket (*Gryllotalpa australis*), 3 small Grasshoppers (*Paratettix* sp.). Miscellaneous insects: Quantity of remains.

No. 5.—? sex, ? weight; December, 1935. Collected by ?. Coleoptera: 6 Scarabæid beetles (*Heteronyx* sp.), 1 Soldier beetle (*Telephorus pulchellus*). Odonata: 1 Anisopterid dragonfly. Lepidoptera: 434 Army Worm Caterpillars (Noctuidæ). Orthoptera: 5 Grasshoppers (*Calataria terminifera*) (mature), 2 Grasshoppers (immature). Miscellaneous insects: Quantity of remains.

No. 6.—? sex, ? weight; December, 1935. Collected by ?. Coleoptera: 1 *Heteronyx* sp. Lepidoptera: 53 Army Worm Caterpillars (Noctuidæ). Orthoptera: 1 large immature Grasshopper. Mollusca: 102 *Bullinus* sp., 5 *Planorbis* sp.

No. 7.—? sex, ? weight; December, 1935. Collected by ?. Coleoptera: 12 Ladybird beetles (*Leis conformis*), 2 Dung beetles (*Onthophagus granicollis*), 2 *Diphucephala* sp. Ephemeroptera: 1 Mayfly. Hemiptera: 6 *Gerris* sp. Lepidoptera: 1 moth (? gen. et sp.). Hymenoptera: 1 Evaniid wasp (? gen. et sp.), 3 small Sawflies (? gen. et sp.), 1 Thynnid wasp (♀). Orthoptera: 8 immature Grasshoppers, 1 small Cricket (? gen. et sp.). Mollusca: 56 *Bullinus* sp., 27 *Planorbis* sp.

No. 8.—? sex, ? weight; December, 1935. Collected by ?. Orthoptera: 1 immature Grasshopper. Mollusca: 10 *Bullinus* sp.

No. 9.—? sex, ? weight; December, 1935. Collected by ?. Coleoptera: 3 Ladybird beetles (*Leis conformis*), 1 *Heteronyx* sp., 1 Dung beetle (*Onthophagus granicollis*). Odonata: 1 Anisopterid nymph. Hymenoptera: 2 Thynnid wasps (♂♂). Orthoptera: 1 immature Grasshopper.

Summary of Food of Brown Trout, Fish River.

Stomachs examined	9
Coleoptera	77
Ephemeroptera	1
Lepidoptera	488
Hemiptera	6
Hymenoptera	19
Odonata	2
Orthoptera	23
Mollusca	244

Tuross River.

No. 10.—♀, 1 lb.; 26 October, 1935, 12.30 p.m. Collected by Dr. Brown Craig. Coleoptera: 1 small Dytiscid beetle (*Necterosoma pencillata.*) Trichoptera: 2 Caddis cases (stick), 1 Caddis case (sand). Hymenoptera: 1 winged Ant (? gen. et sp.). Miscellaneous: Quantity of gravel.

No. 11.—♀, 3 lb.; 26 October, 1935, 1 p.m. Collected by Dr. A. J. Spiller Brandon. Coleoptera: 1 Staphylinid beetle (*Cafius areolatus*), 2 *Heteronyx* sp., 1 *Cisseis* sp. (Buprestidæ), 1 Elaterid (? gen. et sp.), 1 small Carab beetle (? gen. et sp.). Trichoptera: 3 Caddis cases (sand). Hemiptera: 1 Tree-hopper (*Eurymeloides* sp.). Orthoptera: 1 Grasshopper (*Paratettix* sp.). Hymenoptera: 11 winged Ants (? *Iridomyrmex* sp.).

No. 12.—♀, 1 lb.; 26 October, 1935, 1.15 p.m. Collected by Mr. J. B. Craig. Trichoptera: 6 Caddis cases (sand), 1 Caddis case (stick). Ephemeroptera: 1 Mayfly nymph. Hymenoptera: 1 winged Ant (? gen. et sp.). Amphibia: Remains of a tadpole. Miscellaneous: Quantity of sand and gravel.

No. 13.—? sex, 1¼ lb.; 30 October, 1935, 12 (noon). Collected by Mr. J. B. Craig. Trichoptera: 6 Caddis cases (sand), 3 Caddis cases (stick). Ephemeroptera: 1 Mayfly nymph. Diptera: 22 Mycetophyllid midges. Hymenoptera: 1 Ant (*Iridomyrmex detectus*). Miscellaneous: Quantity of mud.

No. 14.—♀, 1 lb.; 30 October, 1935, 3 p.m. Collected by Mr. J. B. Craig. Coleoptera: Remains of 2 beetles (unidentifiable). Trichoptera: 15 Caddis cases (leaf). Vegetable matter: Quantity of remains.

No. 15.—♀, 3¾ lb.; 30 October, 1935, 4 p.m. Collected by Mr. J. B. Craig. Trichoptera: 1 Caddis case (stick). Crustacea: Claw of Yabbie (*Parachæraps bicarinatus*). Amphibia: 1 Frog, 1 Tadpole.

No. 16.—♀, 1¼ lb.; 1 November, 1935, 11 a.m. Collected by Mr. A. C. Ebsworth. Coleoptera: 1 Coleopterous larva. Ephemeroptera: 1 Mayfly nymph. Diptera: 1 Chironomid larva. Amphibia: Remains of tadpoles. Miscellaneous: Quantity of quartz gravel.

No. 17.—♂, 3 lb.; 1 November, 1935, 1 p.m. Collected by Dr. A. J. Spiller Brandon. Coleoptera: 1 *Xyloryctus eucalypti*, 8 *Heteronyx* sp., 1 *Paropsis* sp., 2 small Carab beetles (? gen. et sp.), 3 Elateridæ (? gen. et sp.), 1 Cistelid beetle (? gen. et sp.), 1 Coleopterous larva. Trichoptera: 8 Caddis cases (stick), 2 Caddis cases (sand), 1 Caddisfly (imago). Hemiptera: 1 Pentatomid bug (? gen. et sp.), 1 Pentatomid bug—small (? gen. et sp.). Hymenoptera: 1 Ichneumon wasp (? gen. et sp.). Orthoptera: 1 Grasshopper (*Paratettix* sp.). Isoptera: Quantity of Termite wings. Miscellaneous insects: Quantity of remains.

No. 18.—? sex, 1¼ lb.; 1 November, 1935, 5 p.m. Collected by Dr. Brown Craig. Coleoptera: 1 *Heteronyx* sp., 1 *Paropsis* sp. Hemiptera: 1 Tree-hopper (? gen. et sp.). Hymenoptera: 1 Hive Bee (*Apis mellifera*). Isoptera: 96 winged Termites (*Coptotermes* sp.), and a very great quantity of wings. Miscellanous: Large quantity of quartz gravel.

No. 19.—? sex, ? weight; 1 November, 1935, 4 p.m. Collected by Dr. A. J. Spiller Brandon: Trichoptera: 12 Caddis cases (sand), 4 Caddis cases (stick). Ephemeroptera: 3 Mayfly nymphs. Isoptera: 3 winged Termites (*Coptotermes*) and quantity of wings. Miscellaneous insects: Quantity of broken remains.

No. 20.—? sex, 1¼ lb.; 2 November, 1935, 11.30 a.m. Collected by Mr. J. B. Craig. Coleoptera: 1 small Cistelid beetle (? gen. et sp.). Trichoptera: 10 Caddis cases (stick), 12 Caddis cases (sand). Ephemeroptera: 28 Mayfly nymphs. Miscellaneous insects: Small quantity of remains. Vermes: 1 Gordian worm. Amphibia: 1 Frog.

No. 21.—♀, 1 lb.; 3 November, 1935, 12.15 p.m. Collected by Dr. A. J. Spiller Brandon. Coleoptera: Remains of beetle (unidentifiable), 2 Soldier beetles (*Telephorus pulchellus*), remains of Elaterid (? gen. et sp.). Trichoptera: 3 Caddis cases (stick). Ephemeroptera: 15 Mayflies (imagines). Lepidoptera: 2 small moths (? gen. et sp.). Odonata: 1 Zygopterid nymph. Hemiptera: 1 Pentatomid bug (? gen. et sp.), 1 *Eurymeloides* sp. Hymenoptera: 1 Thynnid wasp (♀).

No. 22.—♀, 1¼ lb.; 3 November, 1935, 5 p.m. Collected by Mr. J. B. Craig. Ephemeroptera: 5 Mayfly nymphs. Vegetable matter: Stomach crammed with coarse vegetable matter. Miscellaneous: Large quantity of quartz gravel.

No. 23.—♀, 1¼ lb.; 5 November, 1935, 1 p.m. Collected by Dr. A. J. Spiller Brandon. Coleoptera: 1 Hispid bettle (? gen. et sp.). Trichoptera: 3 Caddis cases

(stick), 2 Caddis cases (sand), 1 Caddisfly. Diptera: 1 Stratiomyiid fly (*Odontomyia* sp.). Amphibia: 1 Frog, 1 Tadpole.

No. 24.—♀, 1¼ lb.; 5 November, 1935, 11 a.m. Collected by Dr. A. J. Spiller Brandon. Trichoptera: 7 Caddis cases (stick), 7 Caddis cases (sand). Ephemeroptera: 1 Mayfly nymph. Lepidoptera: 1 Lepidopterous larva. Miscellaneous insects: Small quantity of remains.

No. 25.—♀, 1 lb.; 7 November, 1935, 11.30 a.m. Collected by Mr. J. B. Craig. Trichoptera: 10 Caddis cases (sand), 2 Caddis cases (stick). Ephemeroptera: 2 Mayfly nymphs, 1 Mayfly (imago). Lepidoptera: 1 large Lepidopterous larva. Miscellanous insects: Quantity of unidentifiable remains. Crustacea: 2 Shrimps (*Paratya australiensis*). Vegetable matter: Seed-vessel of a Eucalypt and quantity of vegetable matter.

No. 26.—♀, 2 lb.; 7 November, 1935, 12.30 p.m. Collected by Mr. A. C. Ebsworth. Coleoptera: 1 *Heteronyx* sp., 1 Elaterid (? gen. et sp.). Trichoptera: 1 Caddis case (sand). Ephemeroptera: 2 Mayflies. Odonata: 2 Zygopterid dragonflies (imagines). Hemiptera: 2 Psyllids (Psyllidæ). Diptera: 2 Stratiomyiid flies (♂ and ♀) (? gen. et sp), 1 Blowfly (? gen. et sp.), 1 Mycetophyllid midge. Hymenoptera: 9 Thynnid wasps (8 ♂, 1 ♀) (? gen. et spp.), 1 Bee (? gen. et sp.), 1 winged Ant (? gen. et sp.). Miscellaneous insects: Quantity of broken remains. Arachnida: 1 Spider (? *Araneus* sp.). Miscellaneous: Several feathers.

No. 27.—♂, 3 lb.; 22 December, 1935, 11.30 a.m. Collected by Mr. W. H. Ifould. Coleoptera: 1 small Dytiscid beetle (*Necterosoma penicillata*), 1 *Paropsis* sp. Odonata: 22 Anisopterid nymphs.

No. 28.—♀, 1¼ lb.; 22 December, 1935, 4 p.m. Collected by Mr. W. H. Ifould. Coleoptera: 1 *Heteronyx* sp. Trichoptera: 4 Caddis cases (sand). Ephemeroptera: 2 Mayflies. Hemiptera: 1 *Corixa* sp. Perlaria: 1 Stonefly (? gen. et sp.). Hymenoptera: 2 Ichneumon wasps (? gen. et sp.). Miscellaneous insects: Small quantity of broken remains. Arachnida: 1 Spider (*Tetragnatha* sp.).

No. 29.—♀, 1½ lb.; 23 December, 1935, 11 a.m. Collected by Dr. A. J. Spiller Brandon. Coleoptera: 1 Elaterid (? gen. et sp.). Trichoptera: 7 Caddis cases (sand). Odonata: 1 Zygopterid dragonfly (imago). Diptera: 1 Crane fly (? gen. et sp.). Hemiptera: 1 *Corixa* sp. Arachnida: Legs of spider.

No. 30.—♀, 1 lb.; 23 December, 1935, 1 p.m.—Collected by Mr. W. H. Ifould. Coleoptera: 1 *Diphucephala* sp. Trichoptera: 4 Caddis cases (stick). Ephemeroptera: 2 Mayflies. Odonata: 1 Anisopterid dragonfly (imago). Hymenoptera: 1 Ichneumon wasp (? gen. et sp.).

No. 31.—♀, 4¼ lb.; 24 December, 1935, 10 a.m. Collected by Dr. A. J. Spiller Brandon. Coleoptera: 26 large *Heteronyx* sp. Ephemeroptera: 1 Mayfly. Crustacea: 1 Yabbie (*Parachæraps bicarinatus*).

No. 32.—♀, 1¾ lb.; 24 December, 1935, 1 p.m. Collected by Mr. W. H. Ifould. Coleoptera: 14 *Heteronyx* sp., 8 *Phyllotocus navicularis*, 2 Elateridæ (? gen. et sp.), 1 Longicorn (unidentifiable). Trichoptera: 7 Caddis cases (sand). Odonata: 2 Zygopterous dragonflies (♂♂), 1 Zygopterid nymph. Hymenoptera: 1 Thynnid wasp (♂) (? gen. et sp.), 8 Bees (*Hylæus* sp.). Miscellanous insects: Quantity of remains. Myriapoda: 15 Millepedes (? gen. et sp.).

No. 33.—♀, 1½ lb.; 26 December, 1935, 7 p.m. Collected by Mr. W. H. Ifould. Trichoptera: 5 Caddis cases (sand), 2 Caddis cases (stick). Vermes: 1 Planarian worm (? gen. et sp.).

No. 34.—♀, 1½ lb.; 28 December, 1935, 2.30 p.m. Collected by Mr. W. H. Ifould. Coleoptera: 1 Tenebrionid beetle (? gen. et sp.). Trichoptera: 267 Caddis cases (sand). Odonata: Wings of Anisopterid dragonflies, 1 Anisopterid nymph. Miscellaneous insects: Quantity of finely divided remains.

No. 35.—♀, 1½ lb.; 28 December, 1935, 11 a.m. Collected by Mr. W. H. Ifould. Coleoptera: 3 *Anoplognathus porosus*, 3 Click beetles (Elateridæ—? gen. et sp.), 1 *Heteronyx* sp., 2 *Diphucephala* sp., 23 *Phyllotocus navicularis*, large quantity of Coleopterous remains. Odonata: 1 Zygopterid nymph. Lepidoptera: 1 Lepidopterous larva. Hymenoptera: 1 Bee (*Hylæus* sp.), 1 Ichneumon wasp (? gen. et sp.), 1 Thynnid wasp (♀) (? gen. et sp.).

No. 36.—♂, 1½ lb.; 28 December, 1935, 3 p.m. Collected by Mr. W. H. Ifould. Coleoptera: 1 Weevil (*Orthorrhinus cylindrirostris*). Trichoptera: 1 Caddis case (sand).

No. 37.—♀, 1 lb.; 29 December, 1935, 6.30 p.m. Collected by Mr. W. H. Ifould. Coleoptera: 1 Click beetle (Elateridæ—? gen. et sp.), 3 *Heteronyx* sp. Trichoptera: 46 Caddis cases (sand), 3 Caddis cases (stick). Hemiptera: 1 *Gerris* sp. Miscellaneous insects: Small quantity broken remains.

No. 38.—♀, 2 lb.; 29 December, 1935, 11.30 a.m. Collected by Dr. A. J. Spiller Brandon. Coleoptera: 1 *Anoplognathus porosus*, remains of large Scarabæid beetle (unidentifiable), 1 Soldier beetle (*Telephorus pulchellus*). Trichoptera: 5 Caddis cases (sand). Odonata: 4 Zygopterid nymphs, wings of Zygopterid dragonflies. Arachnida: 1 Spider (*Lycosa* sp.). Crustacea: 1 large Yabbie (*Parachœraps bicarinatus*).

No. 39.—♀, 2 lb.; 30 December, 1935, 12.30 p.m. Collected by Mr. W. H. Ifould. Coleoptera: 3 Elateridæ (? gen. et spp.), 1 *Heteronyx* sp., 1 *Heteronychus eucalypti*. Trichoptera: 10 Caddis cases (sand). Arachnida: Legs of spider (*Isopeda* sp.).

No. 40.—♀, 2 lb.; 30 December, 1935, 11 a.m. Collected by Mr. W. H. Ifould. Coleoptera: 3 *Phyllotocus macleayi*, 5 *Heteronyx* sp., 2 *Anoplognathus porosus*. Trichoptera: 2 Caddis cases (stick). Odonata: 2 Anisopterid dragonflies (imagines). Hemiptera: 1 *Corixa* sp. Miscellaneous insects: Large quantity of broken remains, mostly Coleoptera (Scarabæidæ).

No. 41.—♀, 1¼ lb.; 2 January, 1936, 3 p.m. Collected by Dr. A. J. Spiller Brandon. Coleoptera: 1 Elaterid (? gen. et sp.), 3 *Heteronyx* sp. Trichoptera: 180 Caddis cases (sand), 3 Caddis cases (stick). Hymenoptera: 1 Thynnid wasp (*Hemithynnus variabilis*) (♂).

No. 42.—? sex, 1½ lb.; 2 January, 1936, 7.30 p.m. Collected by Mr. W. H. Ifould. Coleoptera: 1 *Anoplognathus porosus*. Trichoptera: 6 Caddis cases (sand), 1 Caddis case (stick). Arachnida: 2 Spiders (*Araneus* sp.). Crustacea: 1 small Yabbie (*Parachœraps bicarinatus*). Amphibia: 1 Frog.

No. 43.—? sex, 1 lb.; 2 January, 1936, 3.30 p.m. Collected by Mr. W. H. Ifould. Coleoptera: 1 Chrysomelid beetle (? gen. et sp.), 1 Tenebrionid beetle (? gen. et sp.), remains of *Anoplognathus* ? *porosus*. Hemiptera: 1 *Corixa* sp. Hymenoptera: 1 Thynnid wasp (♂) (? gen. et sp.), 2 small Sawflies (Tenthredinidæ—? gen. et sp.).

No. 44.—? sex, 1 lb.; 2 January, 1936, 8 a.m. Collected by Mr. W. H. Ifould. Coleoptera: 11 Scarabæid beetles (*Heteronyx* sp.).

No. 45.—♂, 2 lb. 2 oz.; 6 January, 1936, 12.30 p.m. Collected by Mr. J. Harnett. Coleoptera: 1 *Anoplognathus porosus*. Odonata: 1 Zygopterid nymph, 1 Zygopterid imago. Hemiptera: 1 Pentatomid bug (? gen. et sp.). Crustacea: 1 large Yabbie (*Parachœraps bicarinatus*).

No. 46.—♀, 1 lb.; 11 January, 1936, 1 p.m. Collected by Mr. J. Harnett. Coleoptera: 5 *Anoplognathus porosus*, 1 *Phyllotocus* sp., 1 *Heteronyx* sp. Diptera: 1 Syrphid fly (? gen. et sp.). Hemiptera: 1 *Eurymeloides* sp.

No. 47.—♀, 13 oz.; 17 January, 1936, 6 p.m. Collected by Mr. J. Harnett. Coleoptera: 1 *Phyllotocus* sp., 1 *Heteronyx* sp. Trichoptera: 210 Caddis cases (sand). Hymenoptera: 1 Thynnid wasp (? gen. et sp.), 2 Ants (*Myrmecia* sp.), 1 Bee (? gen. et sp.). Miscellaneous insects: Quantity of insect remains.

No. 48.—♀, ¾ lb.; 18 January, 1936, 11 a.m. Collected by Dr. A. J. Spiller Brandon. Coleoptera: 30 small Scarabæid beetles (? gen. et sp.), 4 *Anoplognathus porosus*. Odonata: 1 large Anisopterid dragonfly (? gen. et sp.). Hymenoptera: 1 Thynnid wasp (♂).

No. 49.—♀, 1 lb. 2 oz.; 18 January, 1936, 12.30 p.m. Collected by Mr. J. Harnett. Coleoptera: 4 *Anoplognathus porosus*, 1 *Heteronyx* sp., 2 *Diphucephala* sp., 1 *Lagria* sp., 1 Dung beetle (*Onthophagus granicollis*), 14 *Phyllotocus* sp., 1 Ladybird beetle (*Leis conformis*). Diptera: 1 Apiocerid fly (? gen. et sp.). Hymenoptera: 2 Wasps (? gen. et sp.). Arachnida: 1 Spider (*Araneus* sp.).

No. 50.—♀, ¾ lb.; 19 January, 1936. 11 a.m. Collected by Mr. J. Harnett. Coleoptera: 1 *Anoplognathus porosus*), 1 Elaterid beetle (? gen. et sp.), 1 Dung beetle (*Onthophagus granicollis*), 1 *Diphucephala* sp. Trichoptera: 1 Caddis case (sand). Diptera: 1 Fly (*Rutilia* sp.). Hemiptera: 1 *Gerris* sp. Hymenoptera: 1 Thynnid wasp (♂), 4 winged Ants (*Iridomyrmex* sp.). Miscellaneous: 1 feather.

No. 51.—♀, 1 lb.; 19 January, 1936, 12.30 p.m. Collected by Mr. J. Harnett. Coleoptera: 2 Elaterid beetles (? gen. et sp.), 1 Clerid beetle (*Trogodendron* sp.). Trichoptera: 69 Caddis cases (sand). Hemiptera: 10 *Gerris* sp. Hymenoptera: 1 Thynnid wasp (? gen. et sp.), 1 Ant (*Myrmecia* sp.).

No. 52.—♀, ¾ lb.; 18 January, 1936, 5.30 p.m. Collected by Mr. J. Harnett. Coleoptera: 1 *Heteronyx* sp., 4 *Phyllotocus* sp., 1 *Anoplognathus porosus*. Trichoptera: 31 Caddis cases (sand), 2 Caddis cases (stick). Hemiptera: 1 Tree-hopper (*Eurymeloides* sp.). Hymenoptera: 3 Bees (*Halictus* sp.), 2 Thynnid wasps (♂♂).

No. 53.—♀, ½ lb.; 18 January, 1936, 6 p.m. Collected by Mr. J. Harnett. Coleoptera: 1 *Phyllotocus* sp. Trichoptera: 8 Caddis cases (sand).

No. 54.—♂, 2¼ lb.; 20 January, 1936, 11 a.m. Collected by Dr. A. J. Spiller Brandon. Coleoptera: 1 *Anoplognathus porosus*, 4 Elaterid beetles (? gen. et sp.), 4 *Heteronyx* sp., 5 *Telura vitticollis*, 1 *Cryptocephalus* sp. Odonata: 1 Anisopterid nymph, 32 Zygopterid dragonflies (imagines).

No. 55.—♀, 1 lb.; 1 February, 1936, 11 a.m. Collected by Dr. A. J. Spiller Brandon. Coleoptera: 1 *Anoplognathus porosus*, 9 *Paropsis* larvæ. Trichoptera: 2 Caddis cases (sand). Diptera: 9 Flies (*Musca vetusissima* or ? *domestica*).

No. 56.—♀, 1½ lb.; 3 February, 1936, 10 a.m. Collected by Dr. A. J. Spiller Brandon. Coleoptera: 1 *Paropsis* sp., 1 *Heteronyx* sp. Trichoptera: 4 Caddis cases (sand). Ephemeroptera: 6 Mayflies.

No. 57.—♀, 1½ lb.; 8 February, 1936, 12.30 p.m. Collected by Dr. A. J. Spiller Brandon. Trichoptera: 160 Caddis cases (sand), 2 Caddis cases (stick). Odonata: 22 Zygopterid dragonflies (imagines). Hemiptera: 1 Reduviid bug (? gen. et sp.), 1 Pentatomid bug (? gen. et sp.). Vegetable matter: Leaves of tea-tree.

No. 58.—♀, 1½ lb.; 14 February, 1936, 5 p.m. Collected by Dr. A. J. Spiller Brandon. Coleoptera: 1 *Paropsis* larva, 1 *Diphucephala* sp., 9 *Heteronyx* sp. Diptera: 57 Chironomid midges. Hemiptera: 2 Tree-hoppers (*Eurymeloides* sp.).

Hymenoptera: 1 Bee (*Halictus* sp.), 1 Sphecid wasp (? gen. et sp.), 2 large Thynnid wasps (♂ and ♀) (? gen. et sp.), 2 small Thynnid wasps (♂ and ♀) (? gen. et sp.), 1 Thynnid wasp (♂), 5 winged Ants (? gen. et sp.). Orthoptera: I immature Grasshopper. Isoptera: 1 winged Termite (*Coptotermes* sp.).

No. 59.—♂, 1¼ lb.; 15 February, 1936, 11 a.m. Collected by Dr. A. J. Spiller Brandon. Coleoptera: 1 *Phyllotocus assimilis*, 1 *Paropsis* larva. Trichoptera: 6 Caddis cases (sand). Odonata: 2 Zygopterid nymphs. Diptera: 672 Chironomid midges. Hemiptera: 1 Pentatomid bug (? gen. et sp.). Orthoptera: 1 immature Grasshopper (long-horned).

No. 60.—♀, 1¾ lb.; 15 February, 1936, 10.30 a.m. Collected by Dr. A. J. Spiller Brandon. Coleoptera: 1 *Paropsis* sp., 1 *Phyllotocus assimilis*, some Scarabæid remains. Trichoptera: 1 Caddis fly. Diptera: 1,057 Chironomid midges and stomach crammed with remains. Hemiptera: 6 Tree-hoppers (*Eurymeloides* sp.).

No. 61.—♀, 1 lb.; 15 February, 1936, 6 p.m. Collected by Dr. A. J. Spiller Brandon. Coleoptera: 1 *Cryptocephala* sp., 1 *Cisseis* sp. (Buprestidæ), 1 *Diphucephala* sp. Trichoptera: 1 Caddis case (stick), 3 Caddis cases (sand). Ephemeroptera: 1 Mayfly and quantity of remains. Diptera: 37 Chironomid midges. Hymenoptera: 1 Bee (*Apis mellifera*), 1 Bee (*Hylæus* sp.), 6 winged Ants (? gen. et sp.), 2 Bees (*Halictus* sp.).

No. 62.—♀, 1 lb. 16 February, 1936, 1 p.m. Collected by Dr. A. J. Spiller Brandon. Coleoptera: 1 Soldier beetle (*Telephorus pulchellus*), 1 *Diphucephala* sp., 1 *Heteronyx* sp., 1 Tenebrionid beetle (? gen. et sp.), 1 Gyrinid beetle (? gen. et sp.). Trichoptera: 4 Caddis cases (sand), 1 Caddis case (stick). Odonata: 8 Zygopterid nymphs. Diptera: 1 *Bibio* sp. Hemiptera: 2 Tree-hoppers (*Eurymeloides* sp.).

No. 63.—♂, 2 lb.; 17 February, 1936, 11 a.m. Collected by Mr. V. Richards. Coleoptera: 1 Scarabæid beetle (*Telura vitticollis*). Odonata: Wings of Anisopterid dragonflies. Hemiptera: 1 *Gerris* sp.

No. 64.—♀, 1 lb.; 17 February, 1936, 11.30 a.m. Collected by Mr. V. Richards. Coleoptera: 1 Scarabæid beetle (*Telura vitticollis*), 1 *Cryptocephala* sp., 2 Ladybird beetles (*Rhizobius* sp.). Orthoptera: 1 immature Grasshopper. Miscellaneous insects: Stomach crammed with minute fragments of midges and winged ants.

No. 65.—♀, 1 lb.; 17 February, 1936, 12 (noon). Collected by Mr. V. Richards. Coleoptera: 1 *Anoplognathus porosus*, 1 *Cryptocephala* sp. Odonata: Wings of Zygopterid dragonflies. Vermes: 1 Planarian worm.

No. 66.—♂, 2½ lb.; 18 February, 1936, 10 a.m. Collected by Dr. A. J. Spiller Brandon. Coleoptera: 2 *Paropsis* larvæ, 6 *Heteronyx* sp., 1 *Cisseis* sp., 1 Elaterid (? gen. et sp.), 5 *Telura vitticollis*, 1 *Diphucephala* sp., 1 *Phyllotocus assimilis*. Odonata: 1 Anisopterid nymph. Diptera: 706 Chironomid midges, 1 Stratiomyiid fly (*Odontomyia* sp.), 2 Stratiomyiid flies (*Odontomyia*). Lepidoptera: 1 large moth. Hymenoptera: 1 Thynnid wasp (♂). Hemiptera: 2 Tree-hoppers (*Eurymeloides* sp.), 1 Tree-hopper (? gen. et sp.). Amphibia: 1 Frog.

No. 67.—♀, 1½ lb.; 23 February, 1936, 5 p.m. Collected by Dr. A. J. Spiller Brandon. Coleoptera: 1 Elaterid (? gen. et sp.), 1 Soldier beetle (*Telephorus pulchellus*), 4 *Cryptocephala* sp. Diptera: 1 Syrphid fly (? gen. et sp.), 27 Chironomid midges and quantity of remains. Hemiptera: 22 *Gerris* sp., and quantity of

remains, 4 Rutherglen bugs (*Nysius vinitor*), 2 Tree-hoppers (? gen. et sp.). Thysanoptera: 15 *Idolothrips spectrum* and quantity of remains.

No. 68.—♀, 1¾ lb.; 25 February, 1936, 10 a.m. Collected by Dr. A. J. Spiller Brandon. Coleoptera: 1 Longicorn beetle (*Macrones rufus*), 8 *Heteronyx* sp., 1 *Stigmodera* sp. (Buprestidæ), 2 Scarabæid beetles (? gen. et sp.), 1 *Paropsis* sp. Diptera: 23 Chironomid midges.

No. 69.—♂, 2½ lb.; 25 February, 1936, 11 a.m. Collected by Dr. A. J. Spiller Brandon. Coleoptera: 47 *Phyllotocus assimilis*, 4 *Heteronyx* sp., 1 *Notodascyllus* sp., 2 *Paropsis* sp. Diptera: 2 Stratiomyiid larvæ (? *Odontomyia*), 37 Chironomid larvæ. Hemiptera: 4 Tree-hoppers (*Eurymeloides* sp.). Miscellaneous insects: Large quantity of insect remains.

No. 70.—♀, 1½ lb.; 25 February, 1936, 11.30 a.m. Collected by Dr. A. J. Spiller Brandon. Coleoptera: 14 *Heteronyx* sp., 14 *Phyllotocus assimilis*, 2 Scarabæid beetles (*Teleura vitticollis*). Trichoptera: 1 Caddis case (stick). Odonata: 1 Zygopterid dragonfly (imago). Diptera: 13 Chironomid midges. Hemiptera: 2 Tree-hoppers (*Eurymeloides* sp.), 5 *Gerris* sp. Orthoptera: 1 Cricket (? gen. et sp.). Miscellaneous insects: Quantity of insect remains.

No. 71.—♀, 1 lb.; 29 February, 1936, 11.30 a.m. Collected by Dr. A. J. Spiller Brandon. Coleoptera: 4 Gyrinid beetles (? gen. et sp.). Trichoptera: 84 Caddis cases (sand), 15 Caddis cases (stick). Diptera: 6 Chironomid midges. Hymenoptera: 1 Bee (*Apis mellifera*) (♂), 1 Bee (? gen. et sp.). Hemiptera: 2 *Gerris* sp. Arachnida: 1 Spider (? gen. et sp.).

No. 72.—♀, 2 lb.; 29 February, 1936, 5 p.m. Collected by Dr. A. J. Spiller Brandon. Coleoptera: 3 *Anoplognathus* sp., 2 *Paropsis* larvæ. Trichoptera: 113 Caddis Cases (sand), 6 Caddis cases (stick). Odonata: 1 Zygopterid dragonfly (imago). Diptera: 1 Blowfly (*Lucilia* sp.), 157 Chironomid midges, 2 Crane-flies (Tipulidæ—? gen. et sp.). Hemiptera: 25 Tree-hoppers (*Eurymeloides* sp.), 1 Pentatomid bug (? gen. et sp.). Hymenoptera: 4 Bees (*Apis mellifera*), 2 Ants (*Iridomyrmex detectus*). Miscellaneous insects: Large quantity of finely broken remains. Vegetable matter: Quantity of vegetable remains, tea-tree, leaves, etc.

Summary of Food of Brown Trout, Tuross River.

Stomachs examined	64
Coleoptera	435
Trichoptera	1,501
Ephemeroptera	72
Lepidoptera	5
Hemiptera	108
Hymenoptera	97
Diptera	2,043
Odonata	108
Orthoptera	6
Isoptera	100
Arachnida	9
Myriapoda	15
Vermes	3
Crustacea	6
Amphibia	8