

# AUSTRALIAN MUSEUM SCIENTIFIC PUBLICATIONS

McKeown, Keith C., 1934. The food of trout in New South Wales, 1933–1934. *Records of the Australian Museum* 19(3): 184–213. [28 September 1934].

doi:10.3853/j.0067-1975.19.1934.699

ISSN 0067-1975

Published by the Australian Museum, Sydney

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# THE FOOD OF TROUT IN NEW SOUTH WALES.

1933-1934.

By KEITH C. MCKEOWN

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THIS paper contains the results of the investigation into the food of trout in New South Wales carried out during the season 1933-1934, and gives details of the stomach contents of 118 Rainbow Trout (*Salmo irideus* Gibbons), 27 Brown Trout (*Salmo fario* Linnæus), and 2 Loch Leven Trout (*Salmo levenensis* Walker).

A preliminary report<sup>1</sup> published in 1934 covered the results of the work carried out in 1931-1933. This investigation aroused so much interest among anglers and those concerned in the propagation of trout in our streams that the work was carried on throughout the past season, members of the Rod Fishers' Society of New South Wales kindly submitting collections of trout stomachs from time to time.

A notable feature of the stomachs examined was the large number of caddis cases found, which numbered 6,648 from 146 fish as against 188 in 1931-1933 from 44 fish. These figures conform very closely to those which have been obtained in New Zealand.

Dragonflies and their nymphs were found to be considerably in excess of those found in the previous season's work; 475 in 146 fish as against 56 in 44 fish. One fish contained no less than 256 adult Zygopterid dragonflies. The proportion of aquatic to terrestrial insects is practically reversed, the terrestrial species being in very much smaller numbers this season; a condition due, possibly, to the extremely wet season experienced throughout the State, which would tend to render the terrestrial species less available, and force the fish to feed more upon the aquatic forms.

One small Cat-fish obtained from a Rainbow Trout is of interest in view of the contention that the trout feed upon fry.

The opinion was freely expressed in some quarters that the Brown Trout feeds more upon the surface of the water than does the Rainbow. A comparison of the averages of the various Orders of animals eaten shows that there is little in the figures available to support the contention, whatever may be disclosed when larger

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<sup>1</sup>McKeown.—Notes on the Food of Trout and Macquarie Perch in New South Wales. Rec. Aust. Mus. **xix**, 2, 1934, pp. 141-152, pl. xvii.

numbers are available. The figures showing the comparison of the averages per fish for each food for Brown and Rainbow Trout are as follows:—

	Aquatic.		Non-Aquatic.	
	Brown.	Rainbow.	Brown.	Rainbow.
Coleoptera .....	.36	.52	4.7	2.18
Hemiptera .....	1.5	.21	.23	.46
Hymenoptera .....	...	...	4.0	5.7
Orthoptera .....	...	...	.85	3.1
Trichoptera .....	29.7	37.6	...	...
Lepidoptera .....	...	...	.45	.21
Odonata .....	4.3	2.8	...	...
Ephemeroptera .....	.27	.93	...	...
Diptera .....	...	.02	.9	.52
Neuroptera .....	...	...	...	.18
Thysanoptera .....	...	...	...	.03
Perlaria .....	...	.04	...	...
Araneida .....	...	...	.3	.13
Crustacea .....	.42	.47	...	...
Mollusca .....	.72	1.21	...	...
	37.27	43.8	11.43	12.51

Includes figures from previous paper.

Members of the Rod Fishers' Society of New South Wales have stressed the desirability of tabulating the various foods taken by the fish for each month of the season. Tables setting out the monthly distribution of food of Rainbow and Brown Trout for each locality are therefore appended:—

**Monthly Comparison of Stomach Contents of Rainbow Trout**  
(*Salmo irideus* Gibbons).

	November.					December.						
	Goodradigbee.	Badja.	Tuross.	Upper Murrumbidgee.	Barrington.	Little Manning.	Goodradigbee.	Badja.	Tuross.	Upper Murrumbidgee.	Barrington.	Little Manning.
Stomachs exd. ....	13	8	3		24				1	4		
Coleoptera .....	115	8	24		51				...	34		
Hemiptera .....	45	5	1		6				...	2		
Hymenoptera .....	42	...	...		13				...	9		
Neuroptera .....	15	...	...		1				...	...		
Orthoptera .....	3	1	...		...				...	1		
Trichoptera .....	111	1,128	95		68				...	1,250		
Lepidoptera .....	4	...	5		8				...	1		
Odonata .....	3	10	14		34				...	1		
Ephemeroptera .....	*	6	2	No data.	11	No data.	No data.	No data.	...	62	No data.	No data.
Diptera .....	5	6	1	No data.	52	No data.	No data.	No data.	...	1	No data.	No data.
Thysanoptera .....	...	...	...	No data.	4	No data.	No data.	No data.	...	...	No data.	No data.
Perlaria .....	3	...	...	No data.	4	No data.	No data.	No data.	...	...	No data.	No data.
Miscellaneous Insects	*	*	*	No data.	*	No data.	No data.	No data.	...	...	No data.	No data.
Araneida .....	5	1	1		1				...	...		
Vermes .....	1	1	...		1				...	...		
Mollusca .....	...	114	...		...				...	...		
Myriapoda .....	...	...	...		...				...	...		
Amphibia .....	...	1	...		1				...	...		
Pisces .....	...	...	...		...				...	...		
Crustacea .....	2	1	2		17				1	...		

Table covers period 1931-1934.

\* Indicates presence.

Monthly Comparison of Stomach Contents of Rainbow Trout (*Salmo irideus* Gibbons)—continued.

	January.					February.						
	Goodradigbee.	Badja.	Tuross.	Upper Murrumbidgee.	Barrington.	Little Manning.	Goodradigbee.	Badja.	Tuross.	Upper Murrumbidgee.	Barrington.	Little Manning.
Stomachs exd. ....	12		8					13				21
Coleoptera .....	66		58					51				15
Hemiptera .....	18		11					1				6
Hymenoptera .....	33		3					5				9
Neuroptera .....	11		...					...				...
Orthoptera .....	2		1					3				76
Trichoptera .....	10		1,825					394				409
Lepidoptera .....	3		9					2				1
Odonata .....	9		31					376				14
Ephemeroptera .....	2	No data.	4	No data.	No data.	No data.	No data.	...	No data.	No data.	No data.	1
Diptera .....	2	No data.	1	No data.	No data.	No data.	No data.	...	No data.	No data.	No data.	2
Thysanoptera .....	...	No data.	...	No data.	No data.	No data.	No data.	...	No data.	No data.	No data.	...
Perlaria .....	...	No data.	...	No data.	No data.	No data.	No data.	...	No data.	No data.	No data.	...
Miscellaneous Insects	...	No data.	*	No data.	No data.	No data.	No data.	...	No data.	No data.	No data.	...
Araneidæ .....	3		1					...				3
Vermes .....	...		...					...				4
Mollusca .....	...		42					...				...
Myriapoda .....	...		...					...				1
Amphibia .....	...		...					...				1
Pisces .....	...		...					...				1
Crustacea .....	...		...					...				3

  

	March.					April.						
	Goodradigbee.	Badja.	Tuross.	Upper Murrumbidgee.	Barrington.	Little Manning.	Goodradigbee.	Badja.	Tuross.	Upper Murrumbidgee.	Barrington.	Little Manning.
Stomachs exd. ....		28						19	3			
Coleoptera .....		4						19	20			
Hemiptera .....		8						10	7			
Hymenoptera .....		20						355	407			
Neuroptera .....		1						...	...			
Orthoptera .....		2						394	2			
Trichoptera .....		318						113	35			
Lepidoptera .....		...						...	1			
Odonata .....		23						16	22			
Ephemeroptera .....		26	No data.	No data.	No data.	No data.	No data.	27	5	No data.	No data.	No data.
Diptera .....		4	No data.	No data.	No data.	No data.	No data.	4	12	No data.	No data.	No data.
Thysanoptera .....		...	No data.	No data.	No data.	No data.	No data.	1	...	No data.	No data.	No data.
Perlaria .....	No data.	...	No data.	No data.	No data.	No data.	No data.	...	...	No data.	No data.	No data.
Miscellaneous Insects	No data.	*	No data.	No data.	No data.	No data.	No data.	*	*	No data.	No data.	No data.
Araneidæ .....		2						3	1			
Vermes .....		1						1	3			
Mollusca .....		1						33	...			
Myriapoda .....		...						...	...			
Amphibia .....		...						...	...			
Pisces .....		...						...	...			
Crustacea .....		2						42	...			

Table covers period 1931-1934.

\* Indicates presence.

**Monthly Comparison of Stomach Contents of Brown Trout**  
(*Salmo fario* Linnæus).

	November.		December.		January.		February.	
	Tuross.	Upper Murrumbidgee.	Tuross.	Upper Murrumbidgee.	Tuross.	Upper Murrumbidgee.	Tuross.	Upper Murrumbidgee.
Stomachs exd. ...	6		1	9	14		3	
Coleoptera .....	33		1	68	42		17	
Hemiptera .....	3		...	5	50		2	
Hymenoptera ...	2		...	9	109		1	
Orthoptera .....	2		...	12	13		1	
Trichoptera .....	325		7	31	605		2	
Lepidoptera .....	8		1	5	1		...	
Odonata .....	11	No data.	6	16	76		7	No data.
Ephemeroptera ...	3		2	1	3	No data.	...	
Diptera .....	1		...	2	18		...	
Mecoptera .....	...	No data.	...	1	...	No data.	...	No data.
Misc. Insects .....	*		*	*	*		...	
Araneidæ .....	...		...	2	8		1	
Vermes.....	1		...	...	10		...	
Mollusca .....	...		...	...	24		...	
Mammalia .....	...		...	...	1		...	
Crustacea.....	4		5	...	5		...	

Table covers period 1933-1934.

\* Indicates presence.

The following notes on river conditions will prove of value in studying the trout food from each locality.

**Big Badja River.**

Note by Mr. A. C. Ebsworth, 6th April, 1934.—“ When we arrived the river was in partial flood, and as there had been a lot of rain (we have hardly had three fine days in succession) it has remained above normal level. The fish have been rising very little, and those caught have mostly been with a sunk fly, owing, I suppose, to the fact of there being plenty of food in the water brought down by the various floods. These conditions may have some bearing on the contents of the stomachs.”

**Tuross River.**

Conditions in the Tuross River have been abnormal, repeated floods having washed the river out clean. The first of this series of floods was on 7th January, 1934; two further floods followed at close intervals.

**Barrington River.**

Note by Dr. L. May, 11th December, 1933.—“ The fish were caught on wet and dry fly in various waters. Some were from pools on a gently running section of the Barrington River, others from a very rocky series of rapids known as Sandy Flat, and others from the area near the fenced area near Edwards' original property, where the stream runs through a marshy swamp and where three small brooks unite.”

**Little Manning River.**

Note by Mr. G. H. Montgomery, 25th February, 1934.—“ During my fortnight's visit to the Barrington Tops district (which, by the way, was considerably further north than the Barrington River, the route we took being by Scone, and then east, 70 miles approximately), we had only two fine days, the remaining eleven days being very wet, the streams coming down bankers on two occasions, bringing millions of grasshoppers and other food for the trout, and not once during our visit did the trout rise except to an odd grasshopper floating down, . . . there was never a general rise at any time. In the jar are half a dozen stomachs from the Dilgry. This creek was visited by me for investigation, and in order to get some stomachs for you, particularly as I think the contents will be more varied, the struggle for existence there being much greater than in other streams. It is a very small stream where I was, and there were thousands of small trout there, from three to ten inches long, mostly of the smaller size, and all in roe, showing that in a stream with plenty of food these would be probably, for their age, four times as long and proportionately heavy. The stream must be a natural hatchery, and free from any eels.

You will notice how small the stomachs are from these fish. The Dilgry is in the Parish of Milli, County of Gloucester, about 4 miles or so (at the point I visited) from the Gummi or Little Manning River about 8 or 9 miles from Tomalla Homestead, being 3 miles south-east of Tomalla Public Telephone Office.”

I am indebted to Dr. A. J. Spiller Brandon, Dr. L. May, Messrs. A. C. Ebsworth and G. H. Montgomery, and Rev. W. A. Evans for considerable trouble taken by them in collecting the stomachs for examination and for much valuable information, and to members of the Rod Fishers' Society for assistance they have always readily given me.

**Stomach Contents of Rainbow Trout.**

(*Salmo irideus* Gibbons.)

**Big Badja River.**

- No. 1.— ♀, 1½ lb.; 3 p.m., 6 November, 1933. Collected by Mr. A. C. Ebsworth. Coleoptera : 1 Scarabæid beetle (*Heteronyx* sp.). Hemiptera : 2 immature Corixids. Trichoptera : 265 Caddis cases. Odonata : 1 Zygopterid dragonfly (? gen. et sp.). Ephemeroptera : 3 Mayflies, 2 nymphs, and remains of many other imagines. Diptera : 1 Asilid fly (*Neocaratus inglorious*), 5 flies (? gen. et sp.). Miscellaneous insects : A quantity of finely broken insect remains. Mollusca : 4 *Bullinus* sp. Amphibia : 1 small frog.
- No. 2.— ♀, 2 lb.; 6 p.m., 6 November, 1933. Collected by Mr. A. C. Ebsworth. Trichoptera : 9 Caddis cases. Vermes : 1 Gordian worm. Mollusca : 47 *Bullinus* sp., and 2 *Planorbis* sp. Miscellaneous : Large quantity of sand and gravel.
- No. 3.— ♀, 1½ lb.; 4 p.m., 6 November, 1933. Collected by Mr. A. C. Ebsworth. Trichoptera : 16 Caddis cases. Mollusca : 60 *Bullinus* sp.
- No. 4.— ♂, 1¼ lb.; 5 p.m., 6 November, 1933. Collected by Mr. A. C. Ebsworth.— Coleoptera : 1 beetle (? gen. et sp.). Hemiptera : 2 *Corixa* sp. (immature). Trichoptera : 18 Caddis cases. Odonata : 1 Zygopterid dragonfly nymph. Crustacea : 1 shrimp (*Paratya australiensis*).

- No. 5.—♂, 2¼ lb.; 4:30 p.m., 9 November, 1933. Collected by Mr. A. C. Ebsworth.—Coleoptera: 1 Soldier beetle (*Telephorus* sp.). Hemiptera: 1 *Corixa* sp. Trichoptera: 156 Caddis cases, 2 mature caddis-flies and remains of many others. Odonata: 2 Anisopterid dragonfly nymphs. Araneidæ: 1 spider (*Tetragnatha* sp.).
- No. 6.—♂; 6:30 p.m., 10 November, 1933. Collected by Mr. A. C. Ebsworth.—Trichoptera: 69 Caddis cases, 7 adult caddis-flies together with a large quantity of wings and remains. Odonata: 1 Zygopterid dragonfly nymph. Mollusca: 1 mollusc without shell. Miscellaneous: Portion of water plant with root.
- No. 7.—♀, 2 lb.; 11:30 a.m., 10 November, 1933. Collected by Mr. A. C. Ebsworth.—Coleoptera: 5 small water beetles. Orthoptera: 1 immature grasshopper. Trichoptera: 525 Caddis cases. Odonata: 4 Zygopterid dragonfly nymphs. Ephemeroptera: 1 Mayfly nymph.
- No. 8.—? sex, 2¼ lb.; 4:30 p.m., 10 November, 1933. Collected by Mr. A. C. Ebsworth.—Coleoptera: 1 Soldier beetle (*Telephorus* sp.). Trichoptera: 21 Caddis cases. Odonata: 1 Zygopterid dragonfly nymph.
- No. 8a.—♀, 1¾ lb.; 10 March, 1934. Collected by Rev. W. A. Evans.—Hemiptera: 1 *Corixa* sp. Trichoptera: 27 Caddis cases. Odonata: 2 Zygopterid dragonflies. Ephemeroptera: 4 Mayflies.
- No. 9.—♀, 3½ lb.; 6 p.m., 20 March, 1934. Collected by Mr. A. C. Ebsworth.—Hemiptera: 1 *Corixa* sp. Trichoptera: 6 Caddis cases. Ephemeroptera: Wings of Mayflies. Miscellaneous insects: A quantity of insect remains. Crustacea: 4 shrimps (*Paratya australiensis*).
- No. 10.—♀, 1½ lb.; noon, 20 March, 1934. Collected by Mr. A. C. Ebsworth.—Trichoptera: 5 Caddis cases. Odonata: 1 Zygopterid dragonfly (imago). Miscellaneous: Quantity of vegetable remains.
- No. 11.—♀, ¾ lb.; 6:40 p.m., 20 March, 1934. Collected by Mr. A. C. Ebsworth.—Coleoptera: 1 Hydrophyllid larva, triturated remains of a beetle. Odonata: 1 Anisopterid nymph.
- No. 12.—♀, 3¾ lb.; 7 p.m., 22 March, 1934. Collected by Mr. Cecil Stewart.—Coleoptera: Unidentifiable remains of beetle. Trichoptera: 2 Caddis cases. Crustacea: 1 Yabbie claw (*Parachærapa bicarinatus*).
- No. 13.—♀, ¾ lb.; 6 p.m., 22 March, 1934. Collected by Mr. A. C. Ebsworth.—Hymenoptera: 1 ant (*Camponotus* sp.). Trichoptera: 6 Caddis cases. Ephemeroptera: 7 Mayflies and a quantity of remains. Araneidæ: 1 spider (*Salticidæ*).
- No. 14.—♀, ¾ lb.; 5:30 p.m., 25 March, 1934. Collected by Mr. A. C. Ebsworth.—Trichoptera: 4 Caddis cases.
- No. 15.—♀, ¾ lb.; noon, 26 March, 1934. Collected by Mr. A. E. Morgan.—Trichoptera: 6 Caddis cases. Odonata: 1 Anisopterid nymph. Ephemeroptera: 1 Mayfly.
- No. 16.—♀, 1 lb.; 1 p.m., 26 March, 1934. Collected by Mr. A. E. Morgan.—Trichoptera: 10 Caddis cases. Odonata: 1 Anisopterid dragonfly nymph, and 1 Zygopterid dragonfly imago (? gen. et sp.).
- No. 17.—♀, 1¼ lb.; 2 p.m., 26 March, 1934. Collected by Mr. A. E. Morgan.—Trichoptera: 2 Caddis cases. Odonata: 1 Anisopterid nymph.

- No. 18.—♀, 1 lb.; 12:30 p.m., 26 March, 1934. Collected by Mr. A. E. Morgan.—Hymenoptera: 5 Winged ants (*Myrmecia* sp.), 2 Ichneumon wasps (? gen. et sp.). Orthoptera: 1 grasshopper (immature). Diptera: 2 Stratiomyid flies (*Boreoides* sp.). Miscellaneous insects: Quantity of triturated insect remains.
- No. 19.—♀, 1 lb.; 1 p.m., 28 March, 1934. Collected by Mr. A. E. Morgan.—Trichoptera: 1 Caddis case. Odonata: 1 Anisopterid nymph. Diptera: 7 *Bibio* sp.
- No. 20.—♀, 1 lb.; 3:30 p.m., 28 March, 1934. Collected by Mr. A. C. Ebsworth.—Trichoptera: 18 Caddis cases. Ephemeroptera: 6 Mayflies. Miscellaneous: A few leaves.
- No. 21.—? sex, 1 lb.; 11:30 a.m., 28 March, 1934. Collected by Mr. A. E. Morgan.—Trichoptera: 73 Caddis cases. Odonata: 1 Anisopterid nymph. Diptera: 1 fly (*Rutilia regalis*). Mollusca: 1 *Planorbis* sp. Miscellaneous: 1 feather.
- No. 22.—? sex, 1 lb.; noon, 28 March, 1934. Collected by Mr. A. C. Ebsworth.—Coleoptera: 1 Scarabæid beetle (*Phyllotocus navicularis*). Hemiptera: 8 Water-striders (*Gerris* sp.). Hymenoptera: 1 winged ant (? gen. et sp.). Trichoptera: 30 Caddis cases. Ephemeroptera: 8 Mayflies.
- No. 23.—♀, 1 lb.; noon, 28 March, 1934. Collected by Mr. A. E. Morgan.—Trichoptera: 2 Caddis cases. Miscellaneous insects: A small quantity of insect remains. Miscellaneous: Unidentifiable vegetable matter.
- No. 24.—♀, 1 lb.; 11:30 a.m., 28 March, 1934. Collected by Mr. A. C. Ebsworth.—Hemiptera: 1 Water-strider (*Gerris* sp.). Hymenoptera: 1 bee (? gen. et sp.). Trichoptera: 4 Caddis cases. Odonata: 1 Anisopterid dragonfly nymph.
- No. 25.—♂, 1¼ lb.; 1:30 p.m., 28 March, 1934. Collected by Mr. A. C. Ebsworth.—Hemiptera: 2 *Gerris* sp. Araneidæ: 1 Huntsman spider (*Isopeda* sp.).
- No. 26.—♀, ¾ lb.; 4:45 p.m., 29 March, 1934. Collected by Mr. A. E. Morgan.—Coleoptera: 1 small Hydrophyllid beetle. Hemiptera: Remains of *Gerris* sp.
- No. 27.—♀, 1¼ lb.; 1:30 p.m., 29 March, 1934. Collected by Mr. A. C. Ebsworth.—Hymenoptera: Head of bee (*Apis mellifica*), 1 winged ant (*Myrmecia*) ♂, 1 ant (*Camponotus nigriceps*). Trichoptera: 1 Caddis case. Odonata: 1 Anisopterid dragonfly nymph. Miscellaneous insects: Small quantity of broken insect remains. Crustacea: 1 shrimp (*Paratya australiensis*).
- No. 28.—♀, 3¼ lb.; 3:30 p.m., 30 March, 1934. Collected by Mr. Cecil Stewart.—Hemiptera: 1 *Corixa* sp. Hymenoptera: 1 bee (? gen. et sp.), 1 ant (*Myrmecia* sp.). Trichoptera: 5 Caddis cases. Odonata: 1 Anisopterid dragonfly nymph. Miscellaneous insects: Quantity of broken and unidentifiable insect remains.
- No. 29.—♀, 1 lb.; 1:30 p.m., 30 March, 1934. Collected by Mr. Cecil Stewart.—Hemiptera: 1 *Corixa* sp. Trichoptera: 97 Caddis cases.
- No. 30.—♀, ¾ lb.; 1 p.m., 30 March, 1934. Collected by Mr. Reuben Stewart.—Coleoptera: 1 weevil (*Belus* sp.). Hymenoptera: 1 winged ant ♂ (*Myrmecia* sp.). Neuroptera: 1 Lacewing (*Chrysopa* sp.). Diptera: 1 fly (*Boreoides subulatus*—Fam. Stratiomyidæ) ♀. Miscellaneous insects: Small quantity of finely divided insect remains.



- No. 31.—♀, 1 lb.; 2:30 p.m., 30 March, 1934. Collected by Mr. Cecil Stewart.—Hymenoptera: 1 winged ant ♂ (*Myrmecia gulosa*). Trichoptera: 2 Caddis cases. Orthoptera: 1 grasshopper (*Gonicea australasiae*) immature. Odonata: 2 Anisopterid nymphs.
- No. 32.—♀, 3 lb.; Pound Creek (tributary of Big Badja River), noon, 30 March, 1934. Collected by Mr. A. E. Morgan.—Hymenoptera: 1 worker ant (*Myrmecia gulosa*) and ♂, 1 winged ant (? gen. et sp.). Trichoptera: 4 Caddis cases. Odonata: Wing of Zygopterid dragonfly. Vermes: 1 Gordian worm.
- No. 33.—♂, 1 lb.; 3:30 p.m., 31 March, 1934. Collected by Mr. S. Stewart.—Trichoptera: 1 Caddis case. Odonata: 7 Anisopterid nymphs. Miscellaneous: 1 large feather.
- No. 34.—♀, 1½ lb.; 3:30 p.m., 31 March, 1934. Collected by Mr. A. C. Ebsworth.—Hymenoptera: 1 Hive bee (*Apis mellifica*). Trichoptera: 4 Caddis cases.
- No. 35.—♂, ½ lb.; 4 p.m., 31 March, 1934. Collected by Mr. Reuben Stewart.—Trichoptera: 4 Caddis cases. Odonata: 1 Anisopterid nymph. Miscellaneous: A quantity of sand and gravel.
- No. 36.—♂, ¾ lb.; 3 p.m., 1 April, 1934. Collected by Mr. Cecil Stewart.—Hymenoptera: 12 winged ants (? spp.), 1 ant (*Iridomyrmex rufoniger*).
- No. 37.—♂, ¾ lb.; 3 p.m., 1 April, 1934. Collected by Mr. A. C. Ebsworth.—Trichoptera: 8 Caddis cases. Odonata: 1 Anisopterid nymph. Ephemeroptera: 1 Mayfly.
- No. 38.—♀, ½ lb.; 3:30 p.m., 1 April, 1934. Collected by Mr. A. C. Ebsworth.—Trichoptera: 5 Caddis cases. Odonata: 1 Anisopterid nymph.
- No. 39.—♀, ½ lb.; 4 p.m., 1 April, 1934.—Collected by Mr. A. C. Ebsworth.—Trichoptera: 13 Caddis cases.
- No. 40.—♂, ¾ lb.; 1 p.m., 2 April, 1934. Collected by Mr. Reuben Stewart.—Hymenoptera: 118 winged ants (various spp., mainly *Iridomyrmex*), 1 winged ant ♂ (*Myrmecia gulosa*), and a large quantity of remains of ants. Trichoptera: 3 Caddis cases. Ephemeroptera: 3 Mayflies. Vermes: 1 Gordian worm.
- No. 41.—♂, 2½ lb.; 4:45 p.m., 3 April, 1934. Collected by Mr. A. C. Ebsworth.—Hymenoptera: 10 winged ants including *Myrmecia*, 1 bee (? gen. et sp.). Trichoptera: 2 Caddis cases. Odonata: 1 Anisopterid nymph.
- No. 42.—♂, ¾ lb.; 2 p.m., 2 April, 1934. Collected by Mr. Reuben Stewart.—Trichoptera: 1 Caddis case. Crustacea: 1 shrimp (*Paratya australiensis*). Miscellaneous: 2 leaves.
- No. 43.—♀, 1 lb.; 6 p.m., 5 April, 1934. Collected by Mr. Cecil Stewart.—Hemiptera: 1 *Gerris* sp. Trichoptera: 67 Caddis cases. Odonata: 1 Anisopterid nymph. Ephemeroptera: 23 Mayflies. Diptera: Remains of Mycetophyllid midges. Miscellaneous insects: Quantity of insect remains.
- No. 44.—♀, 1 lb.; 12:30 p.m., ? date, 1934. Collected by Mr. A. E. Morgan.—Coleoptera: 1 large beetle (? *Tenebrionidae*). Crustacea: 1 shrimp (*Paratya australiensis*). Mollusca: 7 *Bullinus* sp.

## Tuross River.

- No. 45.— ♀, 1½ lb.; 4 p.m., 5 November, 1933. Collected by Dr. S. Brandon.—  
Wet Fly: Claret and Mackerel. Coleoptera: 1 Cistelid beetle (? gen. et sp.),  
2 Elaterid beetles (? spp.), 1 Scarabæid beetle (*Heteromyx* sp.). Trichoptera:  
7 Caddis cases. Lepidoptera: 1 Lepidopterous larva. Odonata: 1 Ani-  
sopterid dragonfly nymph. Diptera: 1 Crane fly (Tipulidæ), and other  
dipterous remains. Araneidæ: 1 spider (*Epeira* sp.). Crustacea: 2 shrimps  
(*Paratya australiensis*).
- No. 46.— ♀, 2 lb.; 10 a.m., 6 November, 1933. Collected by Dr. S. Brandon.—  
Fly: Pennell Hackle. Trichoptera: 43 Caddis cases. Lepidoptera: 1  
lepidopterous larva. Odonata: 1 Zygopterid dragonfly nymph. Ephemeroptera:  
2 Mayfly nymphs.
- No. 47.— ♀, ½ lb.; 3 p.m., 7 November, 1933. Collected by Dr. S. Brandon.—  
Fly: Hare's Ear. Coleoptera: 20 Scarabæid beetles (*Heteromyx* sp.).  
Hemiptera: 1 *Corixa* sp. Trichoptera: 45 Caddis cases. Lepidoptera: 3  
lepidopterous larvæ. Odonata: 9 Zygopterid dragonflies and 3 nymphs. Mis-  
cellaneous insects: A small quantity of unidentifiable insect fragments.  
Miscellaneous: A very large quantity of fibrous vegetable matter.
- No. 48.— ♂, 1¼ lb.; 31 December, 1933. Collected by Rev. W. A. Evans.—  
Crustacea: 1 shrimp (*Paratya australiensis*).
- No. 49.— ♀, 1½ lb.; 4 January, 1934. Collected by Dr. S. Brandon.—Coleoptera:  
1 Scarabæid beetle (*Heteromyx* sp.). Hemiptera: 2 *Corixa* sp. Trichoptera:  
53 Caddis cases. Odonata: 16 Zygopterid dragonfly nymphs and 2 imagines.  
Ephemeroptera: 1 Mayfly. Miscellaneous insects: Quantity of insect remains.
- No. 50.— ♀, 4 January, 1934. Collected by Dr. S. Brandon.—Trichoptera: 45  
Caddis cases. Crustacea: 1 Yabbie claw (*Parachærapa bicarinatus*).
- No. 51.— ♀, 1¼ lb.; 11 a.m., 5 January, 1934. Collected by Dr. S. Brandon.—  
Coleoptera: 1 Scarabæid beetle (*Heteromyx* sp.). Trichoptera: 682 Caddis  
cases. Odonata: 9 Zygopterid dragonfly nymphs and 1 imago. Ephem-  
eroptera: 1 Mayfly. Diptera: 1 large Asilid fly. Miscellaneous insects: A  
small quantity of broken insect remains. Miscellaneous: Vegetable matter.
- No. 52.— ♀, 1 lb.; 11 a.m., 16 January, 1934. Collected by Dr. S. Brandon.—  
Coleoptera: 6 large and 9 small Scarabæid beetles (*Heteromyx* spp.) together  
with a large quantity of broken remains. Trichoptera: 94 Caddis cases.  
Ephemeroptera: 1 Mayfly nymph.
- No. 53.— ♀, 1½ lb.; 21 January, 1934. Collected by Rev. W. A. Evans.—  
Coleoptera: Wing cases of Tenebrionid beetle. Hemiptera: 9 *Corixa* sp.  
Trichoptera: 430 caddis cases. Odonata: 2 Zygopterid dragonflies (imagines)  
and 1 Anisopterid nymph. Ephemeroptera: 1 Mayfly. Miscellaneous  
insects: Quantity of finely divided insect remains.
- No. 54.— ? sex; January, 1934. Collected by Dr. S. Brandon.—Coleoptera: 12  
Scarabæid beetles (*Heteromyx* sp.). Hymenoptera: Stomach crammed to  
capacity with triturated remains of ants, ¼ oz. in weight. Orthoptera: 1  
Cockroach (*Panesthia granicollis*). Lepidoptera: 9 Lepidopterous larvæ.  
Araneidæ: 1 spider (*Epeira* sp.).

- No. 55.— ? sex; January, 1934. Collected by Dr. S. Brandon.—Trichoptera : 520 Caddis cases. Mollusca : 42 *Bullinus* sp.
- No. 56.— ? sex; January, 1934. Collected by Dr. S. Brandon.—Coleoptera : 1 *Diphucephala* sp., 22 *Phyllotocus navicularis*, 2 *Heteronyx* sp., 1 Carab beetle (*Clivina* sp.), 1 Ladybird beetle (*Leis conformis*), 1 *Anoplognathus* sp. Hymenoptera : 3 bees (?  $\frac{1}{2}$  en. et spp.). Trichoptera : 1 Caddis case. Miscellaneous insects : A large quantity of unidentifiable insect remains.
- No. 57.— ? sex; 1½ lb.; 3 p.m. 4th February, 1934. Collected by Dr. S. Brandon. Fly : Bredbo.—Coleoptera : 1 *Phyllotocus* sp., 1 Carab beetle (*Clivina* sp.). Hymenoptera : 2 winged ants ♂ (*Myrmecia gulosa*). Trichoptera : 12 Caddis cases. Odonata : 5 Zygopterid dragonflies. Diptera : 1 *Lucilia* sp. Miscellaneous : Quantity of vegetable matter.
- No. 58.— ♀, 1 lb.; Little Back River; 3.15 p.m. 7th February, 1934. Collected by Dr. S. Brandon. Fly : Hopper Hackle.—Coleoptera : 16 Scarabæid beetles (*Heteronyx* sp.), 2 Tenebrionid beetles (? gen. et sp.). Hymenoptera : 1 worker ant (*Myrmecia gulosa*). Orthoptera : 1 grasshopper (immature). Trichoptera : 1 Caddis case. Miscellaneous insects : Quantity of broken remains.
- No. 59.— ♀, 1 lb.; Little Back River; 2 p.m. 7 February, 1934. Collected by Dr. S. Brandon. Fly : Hopper Hackle.—Coleoptera : 2 *Heteronyx* sp., 1 Longicorn beetle (*Phoracantha* sp.), 1 Carab beetle (*Clivina* sp.). Hymenoptera : 1 bee (? gen. et sp.). Orthoptera : 1 grasshopper (immature). Trichoptera : 1 Caddis case. Odonata : 1 Zygopterid dragonfly. Miscellaneous insects : Quantity of unidentifiable insect remains.
- No. 60.— ♀, 1¾ lb.; Little Back River; 4.30 p.m. 7 February, 1934. Collected by Dr. Brandon. Fly : Hopper Hackle.—Coleoptera : 1 *Paropsis* sp., 6 *Heteronyx* spp., 1 Tenebrionid beetle (? gen. et sp.), 3 Halticidæ, 1 *Platypus* sp. Hymenoptera : 1 ant (? gen. et sp.), 1 Thynnid wasp ♀. Orthoptera : 1 grasshopper (immature). Trichoptera : 9 Caddis cases. Lepidoptera : 1 Lepidopterous larva.
- No. 61.— ♀, ¾ lb.; Little Back River; 4 p.m. 7 February, 1934. Collected by Dr. S. Brandon. Fly : Bredbo.—Coleoptera : Quantity of broken remains of beetles, mainly *Heteronyx*. Hemiptera : 1 jassid. Trichoptera : 2 Caddis cases. Lepidoptera : 1 large Lepidopterous larva.
- No. 62.— ♀, 2 lb.; 8 a.m. 10 February, 1934. Collected by Dr. S. Brandon. Fly : Tarana.—Coleoptera : 3 *Heteronyx* sp., 1 Cistelid beetle (? gen. et sp.), 1 Carab beetle (? gen. et sp.). Odonata : 256 Zygopterid dragonflies (imagines), and stomach crammed to capacity with remains.
- No. 63.— ♀, 1 lb.; 12.30 p.m. 10 February, 1934. Collected by Dr. S. Brandon. Fly : Black Hackle.—Coleoptera : 1 Scarabæid beetle (*Heteronyx* sp.), 1 Carab beetle (? gen. et sp.), 1 Longicorn beetle (*Distichocera* sp.). Trichoptera : 332 Caddis cases. Odonata : 1 Zygopterid dragonfly.

- No. 64.—♀, 1½ lb.; 7.15 p.m. 12 February, 1934. Collected by Dr. S. Brandon. Fly: Tarana. NOTE.—Completely empty, the upper stomach being practically a solid fleshy mass; lower stomach also empty.
- No. 65.—♀, 1¼ lb.; 5 p.m. 14 February, 1934. Collected by Dr. S. Brandon. Fly: Tarana.—Trichoptera 9 Caddis cases. Odonata: Stomach crammed with fragments of Zygopterid dragonflies. Miscellaneous: Quantity of fibrous vegetable matter.
- No. 66.—♀, 1 lb.; 3 p.m. 17 February, 1934. Collected by Dr. S. Brandon. Fly: Tarana.—Coleoptera: 2 Carab beetles (*Clivinia* sp.). Miscellaneous insects: Small quantity of finely divided insect remains.
- No. 67.—♀, 1 lb.; 3.30 p.m. 17 February, 1934. Collected by Dr. S. Brandon. Fly: Tarana.—Coleoptera: 1 *Heteronyx*. Miscellaneous insects: Small quantity of unidentifiable insect remains.
- No. 68.—♀; 4.30 p.m. 17 February, 1934. Collected by Dr. S. Brandon. Fly: Hopper Hackle.—Coleoptera: 1 *Heteronyx* sp., 1 Longicorn beetle (*Phoracantha* sp.). Trichoptera: 16 Caddis cases. Odonata: 3 Zygopterid dragonflies.
- No. 69.—♀, 3 lb.; 4 p.m. 18 February, 1934. Collected by Dr. S. Brandon. Fly: Dragonfly.—Coleoptera: 1 *Heteronyx* sp., 1 Tenebrionid beetle (? gen. et sp.). Hymenoptera: 1 wasp (? gen. et sp.). Trichoptera: 12 Caddis cases. Miscellaneous: 16 quartz pebbles of various sizes, and jagged in contour. Largest ¼ oz.; total weight 1½ oz.

#### Upper Murrumbidgee River.

- No. 70.—♂, 1 lb.; 11.30 a.m. 23 December, 1933. Collected by Dr. S. Brandon. Coleoptera: 8 *Heteronyx* sp., 3 *Phyllotocus* sp., 1 *Cryptocephalus* sp., 1 *Hydrophyllus* larva. Hymenoptera: 2 wasps (? gen. et sp.). Orthoptera: 1 grasshopper (*Calataria terminifera*). Trichoptera: 1 Caddis case. Miscellaneous insects: Large quantity of finely broken and unidentifiable insect remains.
- No. 71.—? sex; December, 1933. Collected by Dr. S. Brandon.—Coleoptera: 2 *Phyllotocus* sp., 1 *Paropsis* sp. Hymenoptera: 3 bees (? gen. et sp.), 3 Thynnid wasps ♂♂ (? gen. et sp.). Lepidoptera: 1 Lepidopterous larva. Odonata: 1 Anisopterid dragonfly nymph. Diptera: 3 heads of flies (Muscoïd).
- No. 72.—? sex; December, 1933. Collected by Dr. S. Brandon.—Coleoptera: 4 *Phyllotocus* sp., 5 *Heteronyx* sp., 6 Dryopid beetles (*Simsonia hopsoni*). Hemiptera: 1 *Corixa* sp., 1 Pentatomid bug (? gen. et sp.). Hymenoptera: 1 Thynnid wasp (? gen. et sp.), ♀. Trichoptera: 477 Caddis cases. Ephemeroptera: 62 Mayflies.
- No. 73.—♀, p.m. 1 January, 1934. Collected by Dr. S. Brandon.—Coleoptera: 1 Scarabæid beetle larva, 2 Aquatic beetle larvæ (? *Hydrophyllus*). Trichoptera: 781 Caddis cases.

## Barrington River.

- No. 74.—♂, 12 oz.; 27 November, 1933. Collected by Dr. L. May. Coleoptera : 1 *Heteronyx* sp. Hymenoptera : 1 Thynnid wasp ♀ (? gen. et sp.). Trichoptera : 6 Caddis cases and 1 Caddis-fly. Odonata : 2 Anisopterid nymphs. Crustacea : 1 gastrolith from Yabbie (*Parachærops bicarinatus*). Miscellaneous insects : Quantity of insect remains. Miscellaneous : Quantity of sand and gravel.
- No. 75.—♀, 14 oz.; 27 November, 1933. Collected by Dr. L. May.—Trichoptera : 15 Caddis-flies. Lepidoptera : 1 Lepidopterous larva. Ephemeroptera : 5 Mayflies. Perlaria : 1 Stonefly. Miscellaneous insects : A very large quantity of unidentifiable insect remains.
- No. 76.—♂, 9 oz.; 27 November, 1933. Collected by Dr. L. May.—Trichoptera : 3 Caddis-flies. Odonata : 1 very large Anisopterid nymph. Diptera : 2 *Bibio* sp. Miscellaneous insects : Quantity of insect remains. Crustacea : 1 claw of a small Yabbie (*Parachærops bicarinatus*). Miscellaneous : Quantity of sand.
- No. 77.—♂, 13 oz.; 27 November, 1933. Collected by Dr. L. May.—Trichoptera : 5 Caddis cases, 1 gravid ♀ Caddis-fly. Odonata : 1 large Anisopterid nymph. Crustacea : 1 Yabbie (*Parachærops bicarinatus*).
- No. 78.—? sex; 27 November, 1933. Collected by Dr. L. May.—Coleoptera : 1 Chrysomelid beetle (? gen. et sp.), 1 Gyrinid beetle, 2 *Heteronyx* sp. Hemiptera : 1 Lygæid bug (? gen. et sp.). Hymenoptera : 1 winged ant (? gen. et sp.), 1 *Myrmecia* sp., 3 Thynnid wasps ♀ ♀ (? gen. et sp.). Odonata : 3 Anisopterid nymphs (2 very large). Trichoptera : 2 Caddis-flies. Diptera : 10 *Bibio* sp. Miscellaneous insects : A very large quantity of unidentifiable insect remains. Crustacea : 1 Yabbie (*Parachærops bicarinatus*). Miscellaneous : 1 large jagged pebble. 1 piece of wood 1 inch in length.
- No. 79.—♂, ? weight; 27 November, 1933. Collected by Dr. L. May. Wet fly.—Coleoptera : 1 Clerid beetle (? gen. et sp.), 1 Click beetle (*Elateridae*—? gen. et sp.), 4 *Heteronyx* sp., 2 Soldier beetles (*Telephorus* sp.), 1 Coleopterous larva. Hemiptera : 1 Pentatomid bug (? gen. et sp.), 1 Cercopid (? gen. et sp.). Hymenoptera : 1 Thynnid wasp ♀ (? gen. et sp.), 1 Ichneumon wasp. Trichoptera : 1 Caddis case and 2 Caddis-flies. Ephemeroptera : 1 Mayfly. Miscellaneous insects : Small quantity of broken insect remains.
- No. 80.—♂, 1½ lb.; 27 November, 1933. Collected by Dr. L. May.—Coleoptera : 1 *Heteronyx* sp. Trichoptera : 3 Caddis-flies. Ephemeroptera : 1 Mayfly nymph. Diptera : 23 *Bibio* sp., 1 Ortalid fly (? gen. et sp.), 1 Dipterous larva. Miscellaneous insects : Quantity of insect fragments. Crustacea : 1 Crayfish or Yabbie (*Parachærops bicarinatus*).
- No. 81.—♀, 1 lb.; 27 November, 1933. Collected by Dr. L. May.—Coleoptera : 1 *Heteronyx* sp., 1 Soldier beetle (*Telephorus* sp.). Hymenoptera : 1 Thynnid wasp ♀ (? gen. et sp.). Trichoptera : 1 Caddis case and 2 Caddis-flies. Ephemeroptera : 2 Mayfly nymphs. Diptera : 1 Oncodid fly (? gen. et sp.).

- No. 82.—♀, ? weight; 27 November, 1933. Collected by Dr. L. May. Dry fly : R.A.B.—Trichoptera : 1 Caddis case. Amphibia : 1 frog.
- No. 83.—♂, ? weight; 27 November, 1933. Collected by Dr. L. May. Dry fly : R.A.B.—Coleoptera : 3 Scarabæid beetles (*Heteronyx* sp.), 1 Carab beetle (*Clivina* sp.), 1 Chrysomelid beetle (? gen. et sp.), 1 Cistelid beetle (? gen. et sp.). Hymenoptera : 1 Ichneumon wasp. Trichoptera : 1 Caddis-fly. Ephemeroptera : 1 Mayfly. Miscellaneous insects : Quantity of unidentifiable insect fragments. Miscellaneous : Mud and pebbles.
- No. 84.—♀, ? weight; 27 November, 1933. Collected by Dr. L. May.—Coleoptera : 2 Soldier beetles (*Telephorus* sp.), 2 Scarabæid beetles (*Heteronyx* sp.), and broken remains of beetles. Neuroptera : 1 brown lacewing (*Micromas* sp.). Trichoptera : 1 Caddis case. Ephemeroptera : 1 Mayfly nymph. Odonata : Wings of Zygopterid dragonflies. Diptera : 6 Mycetophyllid midges (? gen. et sp.), 1 Syrphid fly (*Syrphus viridiceps*). Miscellaneous insects : Quantity of insect remains. Miscellaneous : Mud.
- No. 85.—♂, 14 oz.; 27 November, 1933. Collected by Dr. L. May.—Coleoptera : 1 *Diphucephala* sp., 1 weevil (unidentifiable remains). Trichoptera : 3 Caddis cases, 2 Caddis-flies. Lepidoptera : 6 Lepidopterous larvæ. Odonata : 3 Anisopterid dragonfly nymphs. Diptera : 1 *Bibio* sp. Perlaria : 2 Stoneflies (♂ and ♀ *in cop.*). Miscellaneous insects : Quantity of insect remains. Miscellaneous : Mud.
- No. 86.—♀, 9 oz.; 28 November, 1933. Collected by Dr. L. May.—Trichoptera : 1 Caddis-fly. Odonata : 1 Anisopterid nymph, and wings of Zygopterid dragonflies. Ephemeroptera : 1 Mayfly. Miscellaneous insects : A small quantity of insect fragments.
- No. 87.—♂, 8 oz.; 28 November, 1933. Collected by Dr. L. May.—Coleoptera : 1 Dryopid beetle larva. Trichoptera : 1 Caddis case. Odonata : 1 Anisopterid nymph. Miscellaneous insects : Small quantity of remains. Crustacea : 1 small Yabbie claw (*Parachærops bicarinatus*).
- No. 88.—♂, 11 oz.; 28 November, 1933. Collected by Dr. L. May.—Coleoptera : 1 small Scarabæid larva. Trichoptera : 1 Caddis case. Odonata : 2 Anisopterid dragonfly nymphs and wing remains of a large imago. Miscellaneous insects : Quantity of finely divided insect fragments. Crustacea : 1 Crayfish or Yabbie (*Parachærops bicarinatus*).
- No. 89.—♀, 8 oz.; 28 November, 1933. Collected by Dr. L. May.—Coleoptera : Remains of large unidentifiable beetle. Trichoptera : 2 Caddis cases. Crustacea : Oolith from Yabbie (*Parachærops bicarinatus*).
- No. 90.—♀, 7½ oz.; 28 November, 1933. Collected by Dr. L. May.—Hymenoptera : 1 ant (? gen. et sp.). Odonata : 2 Anisopterid nymphs. Diptera : 1 Mycetophyllid midge (? gen. et sp.).
- No. 91.—♀, 9 oz.; 28 November, 1933. Collected by Dr. L. May.—Coleoptera : 1 *Diphucephala* sp., 2 Soldier beetles (*Telephorus* sp.). Hemiptera : 1 Jassid (? gen. et sp.). Diptera : 1 fly (Oncodidæ). Miscellaneous : Quantity of vegetable matter.

- No. 92.— ♀, 7 oz.; 28 November, 1933. Collected by Dr. L. May.—Coleoptera : 3 Soldier beetles, 2 ♂, 1 ♀ (*Telephorus* sp.). Trichoptera : 3 Caddis cases. Hemiptera : 1 Mealy-bug, Bird of Paradise Fly (*Callipappus australe*). Odonata : 1 large Anisopterid nymph, and imagines (6) of Zygopterid dragonflies. Miscellaneous insects : Quantity of broken insect fragments. Crustacea : 1 Yabbie (*Parachærops bicarinatus*). Vermes : 1 worm (? earth worm).
- No. 93.— ♂, 13 oz.; 28 November, 1933. Collected by Dr. L. May.—Coleoptera : 2 Chrysomelid beetles (? gen. et spp.), 2 Soldier beetles (*Telephorus* sp.). Odonata : 8 Zygopterid dragonflies and a quantity of wing remains. Diptera : 1 fly (Oncodidæ). Crustacea : 3 Crayfish or Yabbie claws (*Parachærops bicarinatus*).
- No. 94.— ♂, 9 oz.; 28 November, 1933. Collected by Dr. L. May.—Coleoptera : 2 Chrysomelid beetles (? gen. et sp.). Trichoptera : 1 Caddis-fly. Odonata : 1 Anisopterid nymph. Diptera : 1 Mycetophyllid midge (? gen. et sp.), 1 fly (Oncodidæ). Crustacea : 4 Crayfish (*Parachærops bicarinatus*) and fragments of others.
- No. 95.— ♂, 14 oz.; 28 November, 1933. Collected by Dr. L. May.—Hemiptera : 1 plant bug (Pentatomidæ—? gen. et sp.). Hymenoptera : 1 Hive bee (*Apis mellifica*), 1 bee (? gen. et sp.), 1 winged Bull-dog ant ♀ (*Myrmecia gulosa*). Lepidoptera : 1 Lepidopterous larva. Perlaria : 1 Stonefly (? gen. et sp.). Crustacea : 2 Yabbies (*Parachærops bicarinatus*).
- No. 96.— ♂, 10 oz.; 28 November, 1933. Collected by Dr. L. May.—Coleoptera : 1 Cistelid beetle (? gen. et sp.), 1 *Paropsis* sp., 1 Click beetle (Elateridæ—? gen. et sp.), 1 water beetle (*Hydrophyllus* sp.), 1 Chrysomelid beetle (? gen. et sp.), 1 weevil (? gen. et sp.), 1 Ladybird beetle (*Callineda testudinaria*—Coccinellidæ), 1 Scarabæid beetle (*Heteronyx* sp.). Trichoptera : 4 Caddis cases and 5 Caddis-flies. Odonata : 2 Anisopterid nymphs. Diptera : 1 Fungus midge (Mycetophyllidæ). Thysanoptera : 4 thrips (*Idolothrips spectrum*). Miscellaneous insects : Quantity of finely divided insect remains. Miscellaneous : Vegetable remains.
- No. 97.— ♀, 11 oz.; 28 November, 1933. Collected by Dr. L. May.—Coleoptera : Leg and other remains of a large Scarabæid beetle. Trichoptera : 1 Caddis case. Araneidæ : 1 spider (*Epeira* sp.). Miscellaneous insects : A small quantity of insect remains. Miscellaneous : Vegetable remains.

#### Gummi or Little Manning River.

- No. 98.— ? sex, 10 oz.; 5:30 p.m., 12 February, 1934. Collected by Mr. G. H. Montgomery. Fly: Hare's Ear—Orthoptera : 11 grasshoppers (immature), 1 cricket (? gen. et sp.). Trichoptera : 86 Caddis cases. Miscellaneous : A quantity of Algæ.
- No. 99.— ♀, 2 lb.; Junction of Black Gunyah and Little Manning River, 14 February, 1934. Collected by Mr. G. H. Montgomery. Fly: Hardy's Favourite.—Hymenoptera : 1 Ichneumon wasp (? gen. et sp.), 1 bee (? gen. et sp.). Orthoptera : 19 grasshoppers (immature). Odonata : 2 Anisopterid nymphs.

- No. 100.— ? sex, 12 oz.; Junction of Black Gonyah and Little Manning River. 14 February, 1934. Collected by Mr. G. H. Montgomery. Fly: Wet fly.—Orthoptera: 1 grasshopper (immature). Trichoptera: 18 Caddis cases. Odonata: 1 Anisopterid nymph. Miscellaneous: Quantity of Algæ.
- No. 101.— ? sex, 1 lb.; Junction of Black Gonyah and Little Manning River, 14 February, 1934. Collected by Mr. G. H. Montgomery. Fly: Cochu Bundu.—Coleoptera: 1 Hydrophyllid larva. Hemiptera: 1 *Corixa* sp. Hymenoptera: 1 winged ant (? gen. et sp.). Orthoptera: 4 grasshoppers (immature). Trichoptera: 20 Caddis cases. Odonata: 2 Anisopterid nymphs.
- No. 102.— ? sex, 1 lb.; Junction of Black Gonyah and Little Manning River, 14 February, 1934. Collected by Mr. G. H. Montgomery. Fly: Light coloured fly with red tail.—Orthoptera: 2 grasshoppers (immature). Trichoptera: 9 Caddis cases. Odonata: 2 Anisopterid dragonfly nymphs. Miscellaneous insects: a small quantity of unidentifiable insect fragments.
- No. 103.— ? sex, 12 oz.; Junction of Black Gonyah and Little Manning River. Collected by Mr. G. H. Montgomery.—Coleoptera: 1 Soldier beetle (*Telephorus* sp.). Hymenoptera: 1 ant (*Polyrachis* sp.). Orthoptera: 2 grasshoppers (immature). Trichoptera: 5 Caddis cases. Odonata: 1 Anisopterid nymph.
- No. 104.— ♀, 11 oz.; Little Manning River, 15 February, 1934. Collected by Mr. G. H. Montgomery. Fly: Red-tipped Palmer.—Hemiptera: 1 *Corixa* sp., 1 Jassid (? gen. et sp.). Orthoptera: 15 grasshoppers (immature). Trichoptera: 1 Caddis case. Odonata: 1 Zygopterid dragonfly.
- No. 105.— ♂, 18 oz.; 15 February, 1934. Collected by Mr. G. H. Montgomery. Fly: Hardy's Favourite. [NOTE.—Taken after thunderstorm, river slightly swollen.] Coleoptera: 1 Scarabæid beetle (*Diphucephala* sp.). Hemiptera: 1 Jassid (? gen. et sp.). Orthoptera: 12 grasshoppers (immature). Hymenoptera: 1 Hive bee (*Apis mellifica*). Odonata: 1 Zygopterid dragonfly, 1 Anisopterid nymph.
- No. 106.— ♂, 15 oz.; 16 February, 1934. Collected by Mr. G. H. Montgomery. Fly: Light-brown Hackle.—Orthoptera: 1 grasshopper (*Calatoria terminifera*). Trichoptera: 11 Caddis cases.
- No. 107.— ♂, 28 oz.; 16 February, 1934. Collected by Mr. G. H. Montgomery. Fly: Hackle Red-tail. Orthoptera: 2 grasshoppers (immature). Trichoptera: 4 Caddis-flies. Odonata: 2 Anisopterid nymphs and 1 Zygopterid dragonfly. Araneidæ: 1 Tetragnatha spider, 1 spider (? gen. et sp.). Pisces: 1 small Catfish. [NOTE.—This fish was definitely not a young trout or other game fish.]
- No. 108.— ♀, 10 oz.; 16 February, 1934. Collected by Mr. G. H. Montgomery. Fly: Large Hackle red-tail. Orthoptera: 3 grasshoppers (immature). Trichoptera: 23 Caddis cases. Amphibia: 1 frog.



- No. 109.—♀, 20 oz.; 16 February, 1934. Collected by Mr. G. H. Montgomery. Fly: Hackle red-tail. Coleoptera: 1 Scarabæid beetle (*Heteronyx* sp.), 1 weevil (? gen. et sp.). Hemiptera: 1 Jassid (? gen. et sp.), 1 *Corixa* sp. Hymenoptera: 1 ant (*Polyrachis* sp.). Orthoptera: 1 grasshopper (immature), 2 small crickets (unidentifiable). Trichoptera: 4 Caddis cases. Lepidoptera: 1 large Lepidopterous larva (Noctuidæ). Diptera: 1 fly (Stratiomyidæ) Miscellaneous insects: Quantity of remains. Araneidæ: 1 large spider (*Isopeda* sp.).
- No. 110.—♀, 18 oz.; Junction of Black Gonyah and Little Manning River, 17 February, 1934. Collected by Mr. G. H. Montgomery. Fly: Silver Doctor.—Trichoptera: 322 Caddis cases. Crustacea: 1 Yabbie (*Parachæraps bicarinatus*).
- No. 111.—♀,  $\frac{1}{2}$  lb.; Dilgry Creek, 19 February, 1934. Collected by Mr. G. H. Montgomery.—Coleoptera: 1 *Lemodes* sp. Hymenoptera: 1 small Braconid wasp. Trichoptera: 1 Caddis case. Miscellaneous insects: Small quantity (traces only) of broken insect fragments.
- No. 112.—♂, 4 oz.; Dilgry Creek, 19 February, 1934. Collected by Mr. G. H. Montgomery.—Coleoptera: 1 Dryopid beetle larva. Miscellaneous insects: Small quantity of broken insect remains. Miscellaneous: Quantity of vegetable matter.
- No. 113.—♀,  $\frac{1}{2}$  lb.; Dilgry Creek, 19 February, 1934. Collected by Mr. G. H. Montgomery.—Coleoptera: 3 Scarabæid beetles (*Heteronyx* sp.). Trichoptera: 3 Caddis cases.
- No. 114.—♂, 6 oz.; Dilgry Creek, 19 February, 1934. Collected by Mr. G. H. Montgomery.—Coleoptera: 1 Scarabæid beetle (*Heteronyx* sp.), 1 Dryopid beetle larva. Trichoptera: 2 Caddis cases. Ephemeroptera: 1 Mayfly nymph. Diptera: 1 Dipterous larva, and remains of others. Vermes: 4 Gordian worms.
- No. 115.—♀,  $\frac{3}{4}$  lb.; Dilgry Creek, 19 February, 1934. Collected by Mr. G. H. Montgomery.—Coleoptera: 1 Carab beetle (*Clivinia*), 1 Coleopterous larva. Hemiptera: 1 Reduviid bug (? gen. et sp.). Hymenoptera: 1 ant (*Polyrachis* sp.). Miscellaneous insects: Broken remains.
- No. 116.—♀, 4 oz.; Dilgry Creek, 19 February, 1934. Collected by Mr. G. H. Montgomery.—Hymenoptera: 1 ant (*Polyrachis* sp.). Crustacea: 1 Yabbie (*Parachæraps bicarinatus*). Myriapoda: 1 Millepede (? gen. et sp.).
- No. 117.—♀, 18 oz.; Back Creek near junction with Little Manning River, 20 February, 1934. Collected by Mr. G. H. Montgomery. Fly: Hardy's Favourite.—Coleoptera: 1 Scarabæid beetle (*Heteronyx* sp.). Miscellaneous: Quantity of Algæ.
- No. 118.—♂, 15 oz.; Back Creek near junction with Little Manning River, 20 February, 1934. Collected by Mr. G. H. Montgomery. Fly: Large yellow Hackle.—Crustacea: 1 Yabbie (*Parachæraps bicarinatus*).

Summary of Stomach Contents of Rainbow Trout (*Salmo irideus* Gibbons).

Stomach No. ....	1	2	3	4	5	6	7	8	8a	9	10	11	12	13	14
<b>Coleoptera—</b>															
Scarabaeidae	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Elateridae	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chrysomelidae	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Curculionidae	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dryopidae	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Carabidae	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cleridae	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lampyridae	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...
Tenebrionidae	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cistellidae	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dytiscidae	...	...	...	...	...	...	...	5	...	...	...	...	...	...	...
Gyrinidae	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cerambycidae	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hydrophilidae	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Unidentifiable	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...
<b>Hemiptera—</b>															
Pentatomidae	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jassidae	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Corixidae	...	2	...	2	...	1	...	...	1	1	...	...	...	...	...
Gerridae	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lygaeidae	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Reduviidae	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Coccidae	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Hymenoptera—</b>															
Formicidae	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Apidae	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ichneumonidae	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Vespidae	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Braconidae	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Thynnidae	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Neuroptera</b>	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Orthoptera</b>	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Acrididae	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Gryllidae	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Blattidae	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Trichoptera</b>	265	9	16	18	158	76	565	21	27	6	5	...	2	6	4
<b>Lepidoptera</b>	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Noctuidae	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Unidentifiable	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Odonata</b>	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Anisoptera	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...
Zygoptera	1	...	...	1	...	1	4	1	2	...	...	1	...	...	...
<b>Ephemeroptera</b>	5	...	...	...	...	...	1	...	4	...	...	...	...	...	7
<b>Diptera—</b>															
Oncofidae	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Syrphidae	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Muscidae	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tipulidae	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mycetophyllidae	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Stratiomyidae	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Asilidae	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bibionidae	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tachinidae	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Unidentifiable	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Thysanoptera</b>	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Perlaria</b>	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Miscellaneous Insects</b>	*	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Araneidae	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1
Vermes	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Mollusca	4	49	60	...	...	1	...	...	...	...	...	...	...	...	...
<b>Myriapoda</b>	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Amphibia</b>	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Pisces</b>	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Crustacea</b>	...	...	...	1	...	...	...	...	...	4	...	1	...	...	...
<b>Miscellaneous—</b>															
Sand and Gravel	...	*	...	...	...	...	...	...	...	...	...	...	...	...	...
Algae	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bark and twigs	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Vegetable matter	...	...	...	...	...	...	...	*	...	...	*	...	...	...	...
Feathers, etc.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

\* Indicates presence.

Summary of Stomach Contents of Rainbow Trout (*Salmo irideus* Gibbons)—continued.

Stomach No.....	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
<b>Coleoptera—</b>															
Scarabæidæ .....								1							
Elateridæ .....															
Chrysomelidæ .....															
Curculionidæ.....															1
Dryopidæ .....															
Carabidæ .....															
Cleridæ .....															
Lampyridæ .....															
Tenebrionidæ .....															
Cistellidæ .....															
Dytiscidæ .....															
Gyrinidæ .....															
Cerambycidæ .....															
Hydrophyllidæ .....												1			
Unidentifiable .....															
<b>Hemiptera—</b>															
Pentatomidæ .....															
Jassidæ .....															
Corixidæ .....								1		1	2	*		1	1
Gerridæ .....															
Lygæidæ .....															
Reduviidæ .....															
Coccidæ .....															
<b>Hymenoptera—</b>															
Formicidæ .....				5				1					2	1	
Apidæ .....										1			1	1	
Ichneumonidæ .....				2											
Vespidæ .....															
Braconidæ .....															
Thynnidæ .....															
<b>Neuroptera</b>															
<b>Orthoptera—</b>															
Acrididæ .....				1											
Gryllidæ .....															
Blattidæ .....															
<b>Trichoptera</b>	6	10	2		1	18	73	30	2	4			1	5	97
<b>Lepidoptera—</b>															
Noctuidæ .....															
Unidentifiable .....															
<b>Odonata—</b>															
Anisoptera .....	1	1	1		1		1			1		1		1	
Zygoptera .....		1													
<b>Ephemeroptera</b>	1					6		8							
<b>Diptera—</b>															
Oncodidæ .....															
Syrphidæ .....															
Muscidæ .....															
Tipulidæ .....															
Mycetophyllidæ .....															
Stratiomyidæ .....				1											
Asilidæ .....															
Bibionidæ .....					1										
Tachinidæ .....							1								
Unidentifiable .....															
<b>Thysanoptera</b>															
<b>Perilaria</b>															
<b>Miscellaneous Insects</b>				*					*			*		*	
<b>Araneidæ</b>											1				
<b>Vermes</b>															
<b>Mollusca</b>							1								
<b>Myriapoda</b>															
<b>Amphibia</b>															
<b>Pisces</b>												1			
<b>Crustacea</b>															
<b>Miscellaneous—</b>															
Sand and gravel .....															
Alge .....															
Bark and twigs .....						*									
Vegetable matter .....								*							
Feathers, etc. ....							*								

\* Indicates presence.

Summary of Stomach Contents of Rainbow Trout (*Salmo irideus* Gibbons)—*continued.*

Stomach No. ....	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
<b>Coleoptera—</b>															
Scarabaeidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Elateridae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chrysomelidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Curculionidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dryopidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Carabidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cleridae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lampyridae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Tenebrionidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cistellidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dytiscidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Gyrinidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cerambycidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hydrophylidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Unidentifiable .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Hemiptera—</b>															
Pentatomidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jassidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Corixidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Gerridae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lygaeidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Reduviidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Coccidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Hymenoptera—</b>															
Formicidae .....	1	1	2	...	...	...	13	...	...	...	119	10	...	...	...
Apidae .....	...	...	...	...	1	...	...	...	...	...	...	1	...	...	...
Ichneumonidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Vespidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Braconidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Thynnidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Neuroptera</b> .....	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Orthoptera—</b>															
Acrididae .....	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Gryllidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Blattidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Trichoptera</b> .....	...	2	4	1	4	4	...	8	5	13	3	2	1	67	...
<b>Lepidoptera—</b>															
Noctuidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Unidentifiable .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Odonata—</b>															
Anisoptera .....	...	2	...	7	...	1	...	1	1	...	...	1	...	1	...
Zygoptera .....	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
<b>Ephemeroptera</b> .....	...	...	...	...	...	...	...	1	...	...	3	...	...	23	...
<b>Diptera—</b>															
Oncofidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Syrphidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Muscidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tipulidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mycetophyllidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	*
Stratiomyidae .....	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Asilidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bibionidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tachinidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Unidentifiable .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Thysanoptera</b> .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Perlaria</b> .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Miscellaneous Insects</b> .....	*	...	...	...	...	...	...	...	...	...	...	...	...	...	*
<b>Araneidae</b> .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Vermes</b> .....	...	...	1	...	...	...	...	...	...	...	1	...	...	...	7
<b>Mollusca</b> .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Myriapoda</b> .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Amphibia</b> .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Pisces</b> .....	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
<b>Crustacea</b> .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Miscellaneous—</b>															
Sand and gravel .....	...	...	...	...	...	*	...	...	...	...	...	...	...	...	...
Algae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bark and twigs .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Vegetable matter .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Feathers, etc. ....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

\* Indicates presence.

Summary of Stomach Contents of Rainbow Trout (*Salmo irideus* Gibbons)—continued.

Stomach No. ....	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59
<b>Coleoptera—</b>															
Scarabaeidae .....	1	...	20	...	1	...	1	15	...	12	...	26	1	16	2
Elateridae .....	2	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Chrysomelidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Curculionidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dryopidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Carabidae .....	...	...	...	...	...	...	...	...	...	...	...	1	1	...	1
Cleridae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lampyridae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tenebrionidae .....	...	...	...	...	...	...	...	...	1	...	...	...	...	2	...
Cistellidae .....	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dytiscidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Gyrinidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cerambycidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Hydrophyllidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Unidentifiable .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Hemiptera—</b>															
Pentatomidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jassidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Corixidae .....	...	...	1	...	2	...	...	...	9	...	...	...	...	...	...
Gerridae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lygaeidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Reduviidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Coccidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Hymenoptera—</b>															
Formicidae .....	...	...	...	...	...	...	...	...	...	...	...	...	2	1	...
Apidae .....	...	...	...	...	...	...	...	...	...	...	...	3	...	...	1
Ichneumonidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Vespidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Braconidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Thynnidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Neuroptera—</b>															
<b>Orthoptera—</b>															
Acrididae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1
Gryllidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Blattidae .....	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...
<b>Trichoptera .....</b>	7	43	45	...	53	45	682	94	420	...	530	1	12	1	1
<b>Lepidoptera .....</b>															
Noctuidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Unidentifiable .....	1	1	3	...	...	...	...	...	...	9	...	...	...	...	...
<b>Odonata—</b>															
Anisoptera .....	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Zygoptera .....	...	1	12	...	18	...	10	...	2	...	...	...	5	...	1
<b>Ephemeroptera .....</b>	...	2	...	...	1	...	1	...	1	...	...	...	...	...	...
<b>Diptera—</b>															
Oncofidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Syrphidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Muscidae .....	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Tipulidae .....	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mycetophyllidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Stratiomyidae .....	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
Asilidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bibionidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tachinidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Unidentifiable .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Thysanoptera .....</b>	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Periaria .....</b>	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Miscellaneous Insects .....</b>	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Araneidae .....	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Vermes .....</b>	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Mollusca .....</b>	...	...	...	...	...	...	...	...	...	...	42	...	...	...	...
<b>Myriapoda .....</b>	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Amphibia .....</b>	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Pisces .....</b>	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Crustacea .....</b>	2	...	...	1	...	1	...	...	...	...	...	...	...	...	...
<b>Miscellaneous—</b>															
Sand and Gravel .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Algae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bark and twigs .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Vegetable matter .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Feathers, etc. ....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

\* Indicates presence.

Summary of Stomach Contents of Rainbow Trout (*Salmo irideus*  
Gibbons)—continued.

Stomach No.....	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74
<b>Coleoptera—</b>															
Scarabæidæ .....	6	*	3	1	...	...	...	1	1	1	11	2	9	1	1
Elatерidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chrysomelidæ .....	4	...	...	...	...	...	...	...	...	...	1	1	...	...	...
Curculionidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	6	...	...
Dryopidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Carabidæ .....	...	...	1	1	...	...	2	...	...	...	...	...	...	...	...
Cleridæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lampyridæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tenebrionidæ .....	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...
Cistellidæ .....	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
Dytiscidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Gyrinidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cerambycidæ .....	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...
Hydrophyllidæ .....	...	...	...	...	...	...	...	...	...	...	1	...	...	2	...
Unidentifiable .....	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Hemiptera—</b>															
Pentatomidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Jassidæ .....	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Corixidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Gerridæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lygaeidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Reduviidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Coccidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Hymenoptera—</b>															
Formicidæ .....	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Apidæ .....	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...
Ichneumonidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Vespidæ .....	...	...	...	...	...	...	...	...	...	1	2	...	...	...	...
Braconidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Thynnidæ .....	1	...	...	...	...	...	...	...	...	...	...	3	1	...	1
<b>Neuroptera</b> .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Orthoptera—</b>															
Acrididæ .....	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...
Gryllidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Blattidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Trichoptera</b> .....	9	2	...	382	...	9	...	...	16	12	1	...	477	781	7
<b>Lepidoptera—</b>															
Noctuidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Unidentifiable .....	1	1	...	...	...	...	...	...	...	...	...	1	...	...	...
<b>Odonata—</b>															
Anisoptera .....	...	...	...	...	...	...	...	...	...	...	...	1	...	...	2
Zygoptera .....	...	...	256	1	...	*	...	...	3	...	...	...	...	...	...
<b>Ephemeroptera</b> .....	...	...	...	...	...	...	...	...	...	...	...	...	62	...	...
<b>Diptera—</b>															
Oncodidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Syrphidæ .....	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Muscidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tipulidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mycetophyllidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Stratiomyidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Asilidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Biblonidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tachinidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Unidentifiable .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Thysanoptera</b> .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Periaria</b> .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Miscellaneous Insects</b> .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Araneidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Vermes</b> .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Mollusca</b> .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Myriapoda</b> .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Amphibia</b> .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Pisces</b> .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Crustacea</b> .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
<b>Miscellaneous—</b>															
Sand and gravel .....	...	...	...	...	...	...	...	...	...	...	*	...	...	...	*
Algae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bark and twigs .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Vegetable matter .....	...	...	...	...	...	*	...	...	...	...	...	...	...	...	...
Feathers, etc. ....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

\* Indicates presence.

Summary of Stomach Contents of Rainbow Trout (*salmo irideus* Gibbons)—continued.

Stomach No. ....	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89
<b>Coleoptera—</b>															
Scarabaeidae .....				2	4	1	1		3	2	1				1
Elateridae .....					1				1						
Chrysomelidae .....				1							1				
Curculionidae .....															
Dryopidae .....															
Carabidae .....									1						
Cleridae .....					1										
Lampyridae .....					2		1			2					
Tenebrionidae .....															
Cistellidae .....									1						
Dytiscidae .....															
Gyrinidae .....				1											
Cerambycidae .....															
Hydrophyllidae .....															
Unidentifiable .....					1										1
<b>Hemiptera—</b>															
Pentatomidae .....					1										
Jassidae .....					1										
Corixidae .....															
Gerridae .....															
Lygaeidae .....				1											
Reduviidae .....															
Coccidae .....															
<b>Hymenoptera—</b>															
Formicidae .....				1											1
Apidae .....															
Ichneumonidae .....					1				1						
Vespidae .....															
Braconidae .....															
Thynnidae .....				3	1		1								
<b>Neuroptera</b> .....											1				
<b>Orthoptera—</b>															
Acrididae .....															
Gryllidae .....															
Blattidae .....															
<b>Trichoptera</b> .....	15	3	6	2	3	3	3	1	1	1	5	1	1	2	
<b>Lepidoptera—</b>															
Noctuidae .....															
Unidentifiable .....	1										6				
<b>Odonata—</b>															
Anisoptera .....		1	1	3							3	1	3		2
Zygoptera .....										*					
<b>Ephemeroptera</b> .....	5				1	1	2		1	1					
<b>Diptera—</b>															
Oncofidae .....							1								
Syrphidae .....										1					
Muscidae .....															
Tipulidae .....															
Mycetophyllidae .....										6					1
Stratiomyidae .....															
Asilidae .....															
Bibionidae .....		2		10		23					1				
Tachinidae .....															
Unidentifiable .....						2									
<b>Thysanoptera</b> .....															
<b>Perlaria</b> .....	1										2				
<b>Miscellaneous Insects</b> .....	*	*		*	*	*			*	*	*	*	*	*	
<b>Araneidae</b> .....															
<b>Vermes</b> .....															
<b>Mollusca</b> .....															
<b>Myriapoda</b> .....															
<b>Amphibia</b> .....									1						
<b>Pisces</b> .....															
<b>Crustacea</b> .....		1	1	1		1						1	1	1	
<b>Miscellaneous—</b>															
Sand and gravel .....		*		*					*		*				
Algae .....															
Bark and twigs .....				*											
Vegetable matter .....															
Feathers, etc. ....															

\* Indicates presence.

**Summary of Stomach Contents of Rainbow Trout (*Salmo irideus*  
Gibbons)—continued.**

Stomach No.....	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104
<b>Coleoptera—</b>															
Scarabæidæ .....		1					1	1							
Elateridæ .....							1								
Chrysomelidæ .....				2	2		3								
Curculionidæ .....							1								
Dryopidæ .....															
Carabidæ .....															
Cleridæ .....															
Lampyridæ .....		2	3	2										1	
Tenebrionidæ .....															
Cistelidæ .....							1								
Dytiscidæ .....															
Gyrinidæ .....															
Cerambycidæ .....															
Hydrophyllidæ .....							1					1			
Unidentifiable .....										7					
<b>Hemiptera—</b>															
Pentatomidæ .....						1									
Jassidæ .....		1													1
Corixidæ .....												1			1
Gerridæ .....															
Lygaeodæ .....															
Reduviidæ .....															
Coccidæ .....			1												
<b>Hymenoptera—</b>															
Formicidæ .....						1						1		1	
Apidæ .....						2			1						
Ichneumonidæ .....									1						
Vespidæ .....															
Braconidæ .....															
Thynnidæ .....															
<b>Neuroptera—</b>															
<b>Orthoptera—</b>															
Acrididæ .....									11	19	1	4	2	2	15
Gryllidæ .....									1						
Blattidæ .....															
<b>Trichoptera</b> .....			3		1		9	1	86		18	20	9	5	1
<b>Lepidoptera—</b>															
Noctuidæ .....						1									
Unidentifiable .....															
<b>Odonata—</b>															
Anisoptera .....			1		1		2			2	1	2	2	1	
Zygoptera .....			6	8											1
<b>Ephemeroptera</b> .....															
<b>Diptera—</b>															
Oncodidæ .....		1		1	1										
Syrphidæ .....															
Muscidæ .....															
Tipulidæ .....															
Mycetophyllidæ .....					1		1								
Stratiomyidæ .....															
Asilidæ .....															
Bibionidæ .....															
Tachinidæ .....															
Unidentifiable .....								4							
<b>Thysanoptera</b> .....															
<b>Perlaria</b> .....						1									
<b>Miscellaneous Insects</b> .....			*				*	*						*	
<b>Araneidæ</b> .....								1							
<b>Vermes</b> .....			1												
<b>Mollusca</b> .....															
<b>Myriapoda</b> .....															
<b>Amphibia</b> .....															
<b>Pisces</b> .....															
<b>Crustacea</b> .....			1	2	4	2									
<b>Miscellaneous—</b>															
Sand and gravel .....									*		*				
Algae .....															
Bark and twigs .....		*													
Vegetable matter .....							*	*							
Feathers, etc. ....															

\* Indicates presence.



Summary of Stomach Contents of Rainbow Trout (*Salmo irideus* Gibbons)—continued.

Stomach No. ....	105	106	107	108	109	110	111	112	113	114	115	116	117	118	Total.
<b>Coleoptera—</b>															
Scarabæidæ .....	1	...	...	...	1	...	...	...	3	1	...	...	1	...	148
Elateridæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5
Chrysomelidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	16
Curculionidæ .....	...	...	...	...	1	...	...	...	...	...	...	...	...	...	3
Dryopidæ .....	...	...	...	...	...	...	...	1	...	1	...	...	...	...	8
Carabidæ .....	...	...	...	...	...	...	...	...	...	...	1	...	...	...	9
Cleridæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Lampyridæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15
Tenebrionidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6
Cistelidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4
Dytiscidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5
Gyrinidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Cerambycidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3
Hydrophyllidæ .....	...	...	...	...	...	...	...	...	...	...	1	...	...	...	7
Unidentifiable .....	...	...	...	...	...	...	1	...	...	...	1	...	...	...	7
<b>Hemiptera—</b>															
Pentatomidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3
Jassidæ .....	1	...	...	...	1	...	...	...	...	...	...	...	...	...	6
Corixidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	24
Gerridæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5
Lygeidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Reduviidæ .....	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1
Coccidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
<b>Hymenoptera—</b>															
Formicidæ .....	...	...	...	...	1	...	...	...	...	...	1	1	...	...	168
Apidæ .....	1	...	...	...	...	...	...	...	...	...	...	...	...	...	16
Ichneumonidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5
Vespidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3
Braconidæ .....	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1
Thynnidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11
<b>Neuroptera</b>															
<b>Orthoptera—</b>															
Acrididæ .....	12	1	2	3	1	...	...	...	...	...	...	...	...	...	80
Gryllidæ .....	...	...	...	...	2	...	...	...	...	...	...	...	...	...	3
Blattidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
<b>Trichoptera</b> .....	11	4	23	4	322	1	...	3	2	...	...	...	...	...	5,690
<b>Lepidoptera—</b>															
Noctuidæ .....	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1
Unidentifiable .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	25
<b>Odonata—</b>															
Anisoptera .....	1	...	2	...	...	...	...	...	...	...	...	...	...	...	59
Zygoptera .....	1	...	1	...	...	...	...	...	...	...	...	...	...	...	337
<b>Ephemeroptera</b> .....	...	...	...	...	...	...	...	...	...	1	...	...	...	...	138
<b>Diptera—</b>															
Oncodidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4
Syrphidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Muscidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
Tipulidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Mycetophyllidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11
Stratiomyidæ .....	...	...	...	...	1	...	...	...	...	...	...	...	...	...	3
Asilidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
Bibionidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	36
Tachnidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Unidentifiable .....	...	...	...	...	...	...	...	...	...	1	...	...	...	...	8
<b>Thysanoptera</b> .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4
Perlaridæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4
<b>Miscellaneous Insects</b> .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Araneidæ .....	...	...	2	...	1	...	...	...	...	...	...	...	...	...	9
Vermes .....	...	...	...	...	...	...	...	...	...	4	...	...	...	...	8
<b>Mollusca</b> .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	164
<b>Myriapoda</b> .....	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1
<b>Amphibia</b> .....	...	...	...	1	...	...	...	...	...	...	...	...	...	...	3
<b>Pisces</b> .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
<b>Crustacea</b> .....	...	...	...	...	...	1	...	...	...	...	...	1	...	1	31
<b>Miscellaneous</b>															
Sand and gravel .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Algae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bark and twigs .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Vegetable matter .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Feathers, etc. ....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

\* Indicates presence.

Stomach Contents of Brown Trout (*Salmo fario* Linnæus).

## Tuross River.

- No. 1.—♀, 2 $\frac{3}{4}$  lb.; noon, 4 November, 1933. Collected by Dr. S. Brandon. Fly : Pennell Hackle.—Coleoptera : Unidentifiable beetle remains. Hemiptera : 1 Jassid (? gen. et sp.). Trichoptera : 30 Caddis cases. Odonata : 4 Anisopterid dragonfly nymphs, and 1 Zygopterid nymph. Ephemeroptera : 1 Mayfly nymph. Miscellaneous insects : Quantity of unidentifiable insect fragments. Miscellaneous : Mud and gravel.
- No. 2.—♀, 2 $\frac{1}{4}$  lb.; 12:30 p.m., 5 November, 1933. Collected by Dr. S. Brandon. Fly : Pennell Hackle.—Hymenoptera : 1 large ant (unidentifiable). Trichoptera : 9 Caddis cases. Lepidoptera : 8 Lepidopterous larvæ. Odonata : 2 Zygopterid dragonfly nymphs. Ephemeroptera : 1 Mayfly nymph. Miscellaneous : Large piece of bark 2 in. x  $\frac{1}{2}$  in. Quantity of green vegetable matter.
- No. 3.—♀, 1 $\frac{1}{2}$  lb.; 1:15 p.m., 5 November, 1933. Collected by Dr. S. Brandon. Fly : Pennell Hackle.—Trichoptera : 7 Caddis cases. Odonata : 2 Zygopterid dragonfly nymphs. Ephemeroptera : 1 Mayfly and remains of others. Crustacea : 4 shrimps (*Paratya australiensis*).
- No. 4.—♂, 2 lb.; 9 a.m., 7 November, 1933. Collected by Dr. S. Brandon. Fly : Pennell Hackle.—Coleoptera : 1 Cistelid beetle (? gen. et sp.). Orthoptera : 1 Cockroach (*Panesthia* sp.). Trichoptera : 189 Caddis cases. Ephemeroptera : Quantity of partially digested Mayfly remains. Vermes : 1 Gordian worm.
- No. 5.—♀, 4 lb.; 5 p.m., 7 November, 1933. Collected by Dr. S. Brandon. Fly : Pennell Hackle.—Coleoptera : 2 Click beetles (Elateridæ—? gen. et sp.), 26 Scarabæid beetles (*Heteronyx* sp.), 1 Tenebrionid beetle (? gen. et sp.), 1 Longicorn beetle (*Phoracantha* sp.), 2 Chrysomelid beetles (? gen. et sp.). Hemiptera : 1 *Corixa* sp. Orthoptera : 1 grasshopper (*Gastrimargus musicus*). Hymenoptera : 1 bee (*Halictus* sp.). Trichoptera : 90 Caddis cases. Odonata : 1 Zygopterid dragonfly and 1 nymph. Miscellaneous insects : Quantity of insect remains. Miscellaneous : 4 sticks, each 1 inch long, and a quantity of vegetable matter.
- No. 6.—♀, 2 $\frac{1}{4}$  lb.; 9 a.m., 11 November, 1933. Collected by Dr. S. Brandon. Fly : Pennell Hackle.—Hemiptera : *Notonecta* sp. Trichoptera : 7 Caddis cases. Lepidoptera : 1 Lepidopterous larva. Ephemeroptera : 2 Mayfly nymphs. Odonata : 6 Zygopterid dragonfly nymphs. Diptera : 1 fly (Dolichopodidæ). Miscellaneous insects : Small quantity of broken fragments. Miscellaneous : Quantity of vegetable matter including 2 grass seeds.
- No. 7.—♂, 2 $\frac{1}{2}$  lb.; 31 December, 1933. Collected by Rev. W. A. Evans.—Coleoptera : 1 Gyrinid beetle. Trichoptera : 1 Caddis case. Odonata : 2 Zygopterid dragonflies and 1 nymph. Crustacea : 5 shrimps (*Paratya australiensis*). Miscellaneous : Quantity of vegetable matter.
- No. 8.—♀, 2 lb.; 11:30 a.m., 4 January, 1934. Collected by Dr. S. Brandon. Fly : Black Hackle.—Coleoptera : 2 Scarabæid beetles (*Phyllotocus navicularis*). Hemiptera : 1 *Corixa* sp. Trichoptera : 2 Caddis cases. Odonata : 1 Anisopterid nymph. Ephemeroptera : 1 Mayfly.

- No. 9.—♀, 2½ lb.; 6 p.m., 5 January, 1934. Collected by Dr. S. Brandon. Fly : Black Hackle. Trichoptera : 195 Caddis cases. Mollusca : 3 *Bullinus* sp.
- No. 10.—♀, 3 lb.; 8 a.m., 7 January, 1934. Collected by Dr. S. Brandon.—  
[NOTE.—Taken after flood.]—Coleoptera : 2 large Hydrophyllid beetles (*Hydrous latipalpus*), 1 large Dynastid beetle (? gen. et sp.), 1 Coleopterous larva. Hymenoptera : 1 Bull-dog ant (*Myrmecia gulosa*). Orthoptera : 3 grasshoppers (immature). Trichoptera : 10 Caddis cases. Odonata : 10 Anisopterid dragonfly nymphs, 16 Zygopterid nymphs. Diptera : 1 pupa of Stratiomyiid fly. Miscellaneous insects : Large quantity of unidentifiable insect fragments. Vermes : 9 earthworms. Mammalia : Leg-bones, ribs, etc. of a small mammal (? Mouse). Miscellaneous : Large quantity of mud, bark, and sticks. 6 masses of organic matter ? larvæ.
- No. 11.—♀, 4½ lb.; 8 January, 1934. Collected by Dr. S. Brandon.—Coleoptera : 2 Hydrophyllid larvæ, 1 Scarabæid beetle (*Heteronyx* sp.), 1 Carab beetle (? gen. et sp.). Hemiptera : 7 *Gerris* sp. Trichoptera : 6 Caddis cases. Odonata : 1 Anisopterid nymph. Ephemeroptera : 2 Mayflies. Miscellaneous insects : Quantity of unidentifiable fragments. Araneidæ : 1 spider (? gen. et sp.).
- No. 12.—♀, ? weight; 21 January, 1934. Collected by Rev. W. A. Evans.—  
—Trichoptera : 6 Caddis cases.
- No. 13.—♂, 3½ lb.; 11 a.m., 27 January, 1934. Collected by Dr. S. Brandon. Fly : Hopper Hackle.—Coleoptera : 3 Scarabæid beetles (*Heteronyx* sp.).
- No. 14.—♂, 2½ lb.; 3 p.m., 29 January, 1934. Collected by Dr. S. Brandon. Fly : Black Hackle.—Coleoptera : 5 Scarabæid beetles (*Heteronyx* sp.), 2 Scarabæid beetles (*Phyllotocus navicularis*), 1 Carab beetle (? gen. et sp.), Chrysomelid beetle (? gen. et sp.). Hemiptera : 1 Pentatomid bug (? gen. et sp.). Hymenoptera : 1 Ichneumon wasp. Trichoptera : 277 Caddis cases. Odonata : 59 Zygopterid dragonflies (imagines) and 1 nymph.
- No. 15.—♂, 2¾ lb.; 11 a.m., 30 January, 1934. Collected by Dr. S. Brandon. Fly : Black Hackle.—Coleoptera : 8 Scarabæid beetles (*Heteronyx* sp.). Hemiptera : 2 *Corixa* sp., 1 Jassid (? gen. et sp.). Trichoptera : 96 Caddis cases. Odonata : 2 Zygopterid dragonflies.
- No. 16.—? sex, 2 lb.; 5-30 p.m., 5 February, 1934. Collected by Dr. S. Brandon.—  
Fly : Hopper Hackle.—Coleoptera : 11 Scarabæid beetles (*Heteronyx* sp.), 3 *Phyllotocus navicularis*. Hemiptera : 2 *Corixa* sp. Hymenoptera : 1 Thynnid wasp ♂ (? gen. et sp.). Orthoptera : 1 grasshopper (immature). Trichoptera : 1 Caddis case.
- No. 17.—♀, ? weight; 11 a.m., 10 February, 1934. Collected by Dr. S. Brandon. Fly : Black Hackle.—Coleoptera : 2 *Heteronyx* sp., 1 Hydrophyllid larva. Odonata : 6 Zygopterid dragonflies (imagines), and 1 Anisopterid dragonfly (imago). Araneidæ : 1 spider (*Araneus* sp.).
- No. 18.—♀, 1½ lb.; 6-15 p.m., 20 February, 1934. Collected by Dr. S. Brandon. Fly : Red Palmer —Trichoptera : 1 Caddis case.

## Upper Murrumbidgee River.

- No. 19.— ♀ 1¼ lb.; 11 a.m., 23 December, 1933. Collected by Dr. S. Brandon.— Coleoptera: 1 Hydrophyllid larva. Orthoptera: 1 grasshopper (*Calataria terminifera*). Trichoptera: 1 Caddis case. Lepidoptera: 1 Lepidopterous larva. Odonata: 3 Anisopterid dragonfly nymphs.
- No. 20.— ♂, 1½ lb.; 3 p.m., 27 December, 1933. Collected by Dr. S. Brandon, Fly: Pennell Hackle.— Coleoptera: 2 Scarabæid beetles (*Phyllotocus* sp.). 1 Gyrinid beetle (? gen. et sp.). Lepidoptera: 2 Lepidopterous larvæ. Odonata: 1 Anisopterid nymph. Miscellaneous insects: Quantity of insect fragments. Araneidæ: 1 spider (*Araneus* sp.).
- No. 21.— ? sex, 2 lb.; 1 p.m., 29 December, 1933. Collected by Dr. S. Brandon. Coleoptera: 1 Flower Chafer (*Polystigma punctatum*), 2 Scarabæid beetles (*Phyllotocus* sp.), 1 weevil (*Belus* sp.), 1 Carab beetle (*Clivinia* sp.), 1 Soldier beetle (*Telephorus* sp.). Hemiptera: 1 Reduviid bug (? gen. et sp.). Hymenoptera: 1 Hive Bee ♂ (*Apis mellifica*), 1 bee (? gen. et sp.), 5 Thynnid wasps, 2 ♀ and 3 ♂ (? gen. et sp.). Orthoptera: 8 grasshoppers (*Calataria terminifera*). Trichoptera: 13 Caddis cases, and 1 Caddis-fly. Odonata: 1 Anisopterid dragonfly, and 1 Zygopterid dragonfly (imagines). Diptera: 1 fly (Asilidæ—? gen. et sp.). Mecoptera: 1 Scorpion-fly (? gen. et sp.). Miscellaneous insects: Large quantity of unidentifiable insect fragments.
- No. 22.— ? sex, 3¾ lb.; 30 December, 1933. Collected by Dr. S. Brandon.— Coleoptera: 1 Scarabæid beetle (*Heteronyx* sp.). Hemiptera: 1 *Corixa* sp.
- No. 23.— ♀, 1½ lb.; December, 1933. Collected by Dr. S. Brandon. Fly: Jungle Cock.— Coleoptera: 3 Carab beetles (*Clivinia* sp.), 1 beetle (Malacodermidæ), 1 Scarabæid beetle (*Heteronyx* sp.). Hymenoptera: 2 Thynnid wasps, ♂ and ♀ (? gen. et sp.). Orthoptera: 2 grasshoppers (immature). Trichoptera: 7 Caddis cases. Lepidoptera: 1 Lepidopterous larva. Miscellaneous insects: Quantity of remains. Miscellaneous: Mud.
- No. 24.— ♀, 1 lb.; 4:30 p.m., December, 1933. Collected by Dr. S. Brandon.— Coleoptera: 1 Hydrophyllid beetle larva, 1 *Diphucephala* sp., 8 *Heteronyx* sp., 3 *Phyllotocus navicularis*, 1 Pumpkin beetle (*Aulacophora hillaris*), 1 Dung-beetle (*Onthophagus* sp.). Hymenoptera: 1 Ichneumon wasp (? gen. et sp.), 1 Hive Bee (*Apis mellifica*), 1 Thynnid wasp ♂ (? gen. et sp.). Odonata: 6 Anisopterid and 2 Zygopterid dragonfly nymphs. Diptera: 1 Syrphid fly (*Eristalis tenax*). Miscellaneous insects: Large quantity of unidentifiable insect fragments. Araneidæ: 1 spider (? gen. et sp.).
- No. 25.— ? sex, December, 1933. Collected by Dr. S. Brandon.— Coleoptera: 1 beetle (Mordellidæ), 1 Click beetle (*Elateridæ*—? gen. et sp.), 2 *Heteronyx* sp., 2 *Diphucephala* sp., 30 *Phyllotocus navicularis*, 1 *Anoplognathus* sp. Hymenoptera: 3 winged ants (? spp.). Orthoptera: 1 grasshopper (immature). Lepidoptera: 1 large Lepidopterous larva (Noctuidæ). Miscellaneous insects: Large quantity of broken and unidentifiable remains. Miscellaneous: Quantity of mud.

No. 26.—♀, 1 $\frac{3}{4}$  lb.; 11:30 a.m., December, 1933. Collected by Dr. S. Brandon.—  
 Coleoptera : 1 *Heteronyx* sp., 1 *Phyllotocus* sp., 1 Coleopterous larva. Hemip-  
 tera : 1 Cicada (? gen. et sp.). Trichoptera : 1 Caddis case. Odonata : 1  
 Anisopterid nymph.

No. 27.—♂, 1 lb.; 11:30 a.m., December, 1933. Collected by Dr. S. Brandon.—  
 Coleoptera : 3 Scarabæid beetles (*Phyllotocus* sp.), 1 Dung-beetle (*Onthophagus*  
 sp.), Head of a Dytiscid beetle. Hemiptera : 1 *Corixa* sp. Hymenoptera : 1  
 ant (*Iridomyrmex* sp.). Trichoptera : 8 Caddis cases. Odonata : 1 Anisop-  
 terid dragonfly nymph. Ephemeroptera : 1 Mayfly nymph. Miscellaneous :  
 Quantity of leaves, sticks, etc.

Summary of Stomach Contents of Brown Trout (*Salmo fario* Linnæus).

Stomach No. ....	1	2	3	4	5	6	7	8	9	10	11	12	13	14
<b>Coleoptera—</b>														
Scarabæidæ .....	...	...	...	...	26	...	...	2	...	1	1	...	3	7
Elateridæ .....	...	...	...	...	2	...	...	...	...	...	...	...	...	...
Chrysomelidæ .....	...	...	...	...	2	...	...	...	...	...	...	...	...	1
Curculionidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mordellidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Carabidæ .....	...	...	...	...	...	...	...	...	...	...	1	...	...	1
Lampyridæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tenebrionidæ .....	...	...	...	...	1	...	...	...	...	...	...	...	...	...
Cistellidæ .....	...	...	...	1	...	...	...	...	...	...	...	...	...	...
Dytiscidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Gyrinidæ .....	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Cerambycidæ .....	...	...	...	...	1	...	...	...	...	...	...	...	...	...
Hydrophyllidæ .....	...	...	...	...	...	...	...	...	...	1	2	...	...	...
Unidentifiable .....	...	*	...	...	...	...	...	...	...	1	...	...	...	...
<b>Hemiptera—</b>														
Pentatomidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Jassidæ .....	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Corixidæ .....	...	...	...	...	1	...	...	1	...	...	...	...	...	...
Gerridæ .....	...	...	...	...	...	...	...	...	...	...	7	...	...	...
Reduviidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Notonectidæ .....	...	...	...	...	...	1	...	...	...	...	...	...	...	...
Cicadidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Hymenoptera—</b>														
Formicidæ .....	...	1	...	...	...	...	...	...	...	1	...	...	...	...
Apidæ .....	...	...	...	...	1	...	...	...	...	...	...	...	...	...
Ichneumonidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Thynnidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Orthoptera—</b>														
Acrididæ .....	...	...	...	...	1	...	...	...	...	3	...	...	...	...
Blattidæ .....	...	...	...	1	...	...	...	...	...	...	...	...	...	...
<b>Trichoptera</b> .....	30	9	7	189	90	7	1	2	195	6	6	...	...	277
<b>Lepidoptera—</b>														
Noctuidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Unidentifiable .....	...	...	8	...	...	...	1	...	...	...	...	...	...	...
<b>Odonata—</b>														
Anisoptera .....	...	4	...	...	...	...	...	...	1	...	...	...	...	...
Zygoptera .....	...	1	2	2	...	2	6	3	...	...	...	...	...	60
<b>Ephemeroptera</b> .....	1	1	1	...	*	...	2	...	1	...	2	...	...	...
<b>Diptera—</b>														
Syrphidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Stratiomyidæ .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Asilidæ .....	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Dolichopodidæ .....	...	...	...	...	...	1	...	...	...	...	...	...	...	...
<b>Mecoptera</b> .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
<b>Miscellaneous Insects</b> .....	...	*	...	...	...	...	*	*	...	...	*	...	...	...
Araneidæ .....	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Vermes .....	...	...	...	1	...	...	...	...	...	9	...	...	...	...
Mollusca .....	...	...	...	...	...	...	...	...	3	...	...	...	...	...
Mammalia .....	...	...	...	...	...	...	...	...	...	1	...	...	...	...
<b>Crustacea</b> .....	...	...	4	...	...	...	5	...	...	...	...	...	...	...
<b>Miscellaneous—</b>														
Sand and Gravel .....	*	...	...	...	...	...	...	...	...	*	...	...	...	...
Bark and Twigs .....	...	*	...	...	*	...	...	...	...	*	...	...	...	...
Vegetable Matter .....	...	*	...	...	...	*	*	...	...	...	...	...	...	...

\* Indicates presence.

Summary of Stomach Contents of Brown Trout (*Salmo fario* Linnæus)—cont'd.

Stomach No. ....	15	16	17	18	19	20	21	22	23	24	25	26	27	Total.
<b>Coleoptera</b> —														
Scarabaeidae .....	8	14	2	...	...	2	3	1	1	13	35	2	4	125
Elateridae .....	...	...	...	...	...	...	...	...	...	1	1	...	...	4
Chrysomelidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	3
Curculionidae .....	...	...	...	...	...	...	1	...	...	...	...	...	...	1
Mordellidae .....	...	...	...	...	...	...	...	...	3	...	1	...	...	1
Carabidae .....	...	...	...	...	...	...	1	...	3	...	...	...	...	6
Lampyridae .....	...	...	...	...	...	...	1	...	1	...	...	...	...	2
Tenebrionidae .....	...	...	...	...	...	...	...	...	1	...	...	...	...	1
Cistellidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Dytiscidae .....	...	...	...	...	...	...	...	...	...	...	...	...	1	1
Gyrinidae .....	...	...	...	...	...	1	...	...	...	...	...	...	...	2
Cerambycidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Hydrophyllidae .....	...	...	1	...	1	...	...	...	...	1	...	...	...	7
Unidentifiable .....	...	...	...	...	...	...	...	...	...	...	...	1	...	2
<b>Hemiptera</b> —														
Pentatomidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Jassidae .....	1	...	...	...	...	...	...	...	...	...	...	...	...	2
Corixidae .....	2	2	...	...	...	...	...	1	...	...	...	...	1	8
Gerridae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	7
Reduviidae .....	...	...	...	...	...	...	1	...	...	...	...	...	...	1
Notonectidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Cicadidae .....	...	...	...	...	...	...	...	...	...	...	...	1	...	1
<b>Hymenoptera</b> —														
Formicidae .....	...	...	...	...	...	...	...	...	...	3	...	...	1	6
Apidae .....	...	...	...	...	...	...	2	...	...	1	...	...	...	4
Ichneumonidae .....	...	...	...	...	...	...	...	...	1	...	...	...	...	2
Thynnidae .....	1	...	...	...	...	...	5	...	2	1	...	...	...	9
<b>Orthoptera</b> —														
Acrididae .....	...	1	...	...	1	...	8	...	2	...	1	...	...	17
Blattidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	1
<b>Trichoptera</b> .....	96	1	...	1	1	...	14	...	7	...	...	1	8	958
<b>Lepidoptera</b> —														
Noctuidae .....	...	...	...	...	...	...	...	...	...	...	1	...	...	1
Unidentifiable .....	...	...	...	...	1	2	...	...	1	...	...	...	...	13*
<b>Odonata</b> —														
Anisoptera .....	...	1	...	...	3	1	1	...	...	6	...	1	1	30
Zygoptera .....	2	6	...	...	...	...	1	...	...	2	...	...	...	103
<b>Ephemeroptera</b> .....	...	...	...	...	...	...	...	...	...	...	...	...	1	9
<b>Diptera</b> —														
Syrphidae .....	...	...	...	...	...	...	...	...	...	1	...	...	...	1
Stratiomyidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Asilidae .....	...	...	...	...	...	...	1	...	...	...	...	...	...	1
Dolichopodidae .....	...	...	...	...	...	...	...	...	...	...	...	...	...	1
<b>Mecoptera</b> .....	...	...	...	...	...	...	1	...	...	...	...	...	...	1
<b>Miscellaneous Insects</b> .....	...	...	...	...	...	...	*	...	*	...	*	...	...	...
<b>Araneidea</b> .....	...	1	...	...	...	1	...	...	...	1	...	...	...	4
<b>Vermes</b> .....	...	...	...	...	...	...	...	...	...	...	...	...	...	10
<b>Mollusca</b> .....	...	...	...	...	...	...	...	...	...	...	...	...	...	3
<b>Mammalia</b> .....	...	...	...	...	...	...	...	...	...	...	...	...	...	1
<b>Crustacea</b> .....	...	...	...	...	...	...	...	...	...	...	...	...	...	9
<b>Miscellaneous</b> —														
Sand and Gravel .....	...	...	...	...	...	...	...	...	*	...	*	...	...	...
Bark and Twigs .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Vegetable Matter .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...

\* Indicates presence.

Stomach Contents of Loch Leven Trout (*Salmo levenensis* Walker).

## Tuross River.

No. 1.—♀, 2 lb.; 6 p.m., 8 November, 1933. Collected by Dr. S. Brandon.—Fly: Pennell Hackle.—Coleoptera: 1 Coleopterous larva (? *Paropsis*), Remains of beetle (? gen. et sp.). Hemiptera: 1 *Corixa* sp. Trichoptera: 23 Caddis cases. Lepidoptera: 1 Lepidopterous larva. Odonata: 76 Zygopterid dragonfly nymphs. Ephemeroptera: 9 Mayfly nymphs. Diptera 1 fly (? gen. et sp.).

No. 2.—♀, 2¼ lb.; 10 a.m., 3 March, 1934. Collected by Dr. S. Brandon. Fly : Dragon Fly.—Lepidoptera : 16 moths. (Noctuidæ) and stomach crammed with remains of others. Diptera : 1 Blowfly (*Lucilia* sp.). Vermes : 1 Gordian worm.

#### Acknowledgment.

The Trustees desire to express their greatest appreciation to the Rod Fishers' Society of New South Wales for their financial assistance towards the publication of this paper.