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# THE FOOD OF BIRDS FROM SOUTH-WESTERN NEW SOUTH WALES.

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THIS paper contains the results of a detailed examination of the stomachs and crops of one hundred and eighteen birds of sixty-two species collected in south-western New South Wales during the months of September and October, 1932. The skins of the birds are, in most cases, preserved in the Australian Museum.

The fact that entomological collections were made in the same localities and seasons in which the birds were shot has greatly facilitated the work of investigation, since it has enabled fairly definite identifications to be made, in many cases, from quite small insect fragments. Where any doubt has existed with reference to any identification, such determinations are queried. In most of the stomachs of insectivorous birds examined there was usually a considerable quantity of very finely comminuted insect remains. These it was impossible to allocate to their particular orders, excepting beetle fragments, which, resisting the action of the digestive juices better than those of other groups, were usually quite recognizable as such, although too fragmentary for identification even of the family to which they belong. The large number of stomachs listed as containing miscellaneous Coleoptera is due mainly to this, but, while it is practically certain that insects of other orders were represented, it was impossible to indicate them in the classified lists of foods.

Throughout the investigation it became increasingly apparent that to obtain an adequate knowledge of the food of any bird, a large series of stomachs is necessary, since single stomachs may give a possibly erroneous idea of the food. This is instanced by a comparison of specimens procured from the same locality and at the same time. Of three Straw-necked Ibis (*Threskiornis spinicollis*) from Springfield Station, Euroolie, and all obtained at the same time, one contained a centipede, spider, mole cricket, Lepidopterous remains, Coleoptera and grasshoppers; the second, a large quantity of young grasshoppers only, while the third was entirely empty, with the exception of one small beetle elytron. In the case of two Boobook Owls (*Ninox boobook*) shot near the Agricultural High School, Yanco, at 9.30 on the same night and within a few yards of one another, one contained a large number of mature Bugong Moths (*Agrotis infusa*), while the other was full of cutworms and a longicorn beetle.

There can be no doubt that in economically assessing the value of any individual species of bird, it is necessary to examine the stomachs of a large number of specimens, preferably several hundred, in detail. To enable later investigators to add their results to the existing data and to compare them critically, it is necessary that the stomach contents of individual birds should be set out in detail, since a summary of the food of a species will not necessarily indicate the proclivity of individuals of that species to feed on any particular food or foods.

Birds shot in the vicinity of cultivation will naturally contain a greater proportion of food of economic importance to the farmer and orchardist, those in timbered country to the forester, and those taken in open grass-land to the pastoralist. Much, again, will depend upon the food available at any particular season; and the relative accessibility of any particular food at the time the bird

was shot must always be taken into consideration in any investigation of the stomach contents and the food of a bird. The time of day is also a factor to be considered, since birds usually feed mainly in the early morning and evening.

In listing the stomach contents it has been found preferable to give full details of the foods found, since any attempt to state them as percentages of the whole tends to give an erroneous impression, as one specimen of a large insect may form a large percentage of the total bulk as against a similar percentage made up of numerous individuals of some small insect.

A field examination of the stomach contents of birds will frequently give very different results to one carried out under laboratory conditions, and has in many instances to be qualified by such a later detailed examination. It will, therefore, be seen that any hasty examination of the contents of a bird's stomach, by farmers and others unqualified or unequipped for the work, will produce quite erroneous results. In the case of observations in the field, unsupported by a *post mortem*, unless under exceptional conditions, with the aid of field glasses, it is quite impossible to obtain any sound data as to what a bird is feeding upon, and such observations are usually quite valueless. An observer may be quite definite that he has seen a bird eat a certain food, but a careful examination of its stomach contents will frequently prove such a food to be completely absent.

For convenience of reference it may be mentioned that the following species of birds from south-western New South Wales are dealt with by Cleland<sup>1</sup> :—

*Cacatua roseicapilla*, Yanco, four specimens, 19th December, 1914, page 48.

*Barnardius barnardi*, Wilbriggie, 7th October, 1912, page 50.

*Acanthiza pyropyga*, Wilbriggie, 7th October, 1912, page 62.

*Pachycephala rufiventris*, Wilbriggie, 7th October, 1912, page 71.

*Aphelocephala leucopsis*, Wilbriggie, 7th October, 1912, page 73.

*Corvus coronoides*, Yanco, 19th December, 1914, page 91.

I have included in this paper details of the stomach contents of seven specimens of the imported Starling (*Sturnus vulgaris*) collected in and around orchards on the Yanco Irrigation Area during 1927.

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## NOTES ON INSECTS, Etc., OF ECONOMIC IMPORTANCE EATEN BY BIRDS.

*Psyllidæ*.—These small insects infest the leaves of the eucalypts, sucking up the sap and discharging the surplus and forming it into protective shields, or lerp-scales of sugary matter. W. W. Froggatt, in "Forest Insects of Australia, (1923)," page 9, states: "When these insects are numerous large areas of forest, particularly eucalypts, are so badly infested that all the foliage becomes discoloured through the sap being sucked up, the leaves dry up and fall, and thousands of trees

<sup>1</sup> Cleland and others.—N.S.W. Agricultural Department, Science Bulletin, 15 July, 1918.

become defoliated, and look in a very unhealthy condition, or as if they had been ringbarked. If suitable climatic conditions carry on the successive generations of lerp insects through several years, this constant infestation causes the tops of the gum-trees to die back, and the forest rangers state that the timber becomes of an inferior quality to that of uninfested trees."

Longicorn beetle (*Phoracantha recurva*).—The commonest and most widely distributed species of the genus, it would probably become a formidable forest pest, were it not for the large number of parasites which prey upon it. This insect was accidentally introduced into South Africa with timber some years ago, and being free from its natural enemies, attacked the eucalypts that have been planted extensively in many parts of Africa.

Steel-blue Sawfly (*Perga dorsalis*).—The larvæ of these large wasps frequently defoliate the seedlings and young trees of the Red-gum (*Eucalyptus rostrata*) in the forest areas on the Murrumbidgee River frontage near Yanco and towards Hay, and repeated defoliations stunt the growth of the subsequent tree.

Cup Moth (*Doratifera vulnerans*).—The stinging larvæ of the Cup Moth are usually present in very large numbers throughout the forest areas of the Murrumbidgee River frontage, defoliating the Red-gum saplings and small trees, frequently stripping them of every leaf before pupating in their rounded cocoons on the limbs and trunk. During September and October, 1932, the larvæ were in immense numbers, and it was impossible to pass through the trees without becoming severely stung by the hairs of the caterpillars. In those areas where the infestation was heaviest the constant patter of their excreta falling upon the dead leaves on the ground below sounded like rain during a sharp shower.

Weevils (*Curculionidæ*).—Important forest pests, the legless larvæ of some species destroying foliage, while in others they tunnel in timber. Some of the adult weevils attack the opening leaf buds. A number of species have turned their attention to fruit trees, and have become serious orchard pests.

*Paropsis* spp. (*Chrysomelidæ*).—These beetles and their slug-like larvæ frequently defoliate eucalypts in forest areas, and are sometimes of considerable importance to the forester.

Plague Locusts or Grasshoppers (*Calataria terminifera*).—Grasshoppers are perhaps the most serious insect pest which the pastoralist has to combat. The eggs are deposited in the hard patches on the so-called "scalded plains" of the interior and south-west New South Wales, where the young hoppers hatch in the spring in great swarms, destroying herbage and crops as they travel. The grasshopper problem is one of paramount importance to the country, and any birds preying upon them, especially in their young stages, are of the utmost value and should be rigidly protected.

Cutworms (*Noctuidæ*).—The larvæ of a number of species of Noctuid moths are popularly known as "cutworms," and are serious pests on the farm and in the garden, cutting off the young plants of vegetable and field crops at ground level and frequently causing considerable loss.

Bugong Moth (*Agrotis infusa*).—The larvæ of this, among other species of the genus, constitute the vast swarms of caterpillars which appear in some seasons, and are known as "caterpillar plagues." These caterpillars, travelling on an extended face, destroy all crops and grass which they encounter on their march.

Bees (*Apis mellifica*).—Any birds destroying bees in the vicinity of apiaries may prove of considerable economic importance, but in the bush their attacks would be of little importance, and other insects destroyed outweigh the value of any bees consumed.

Crayfish or "Yabbies" (*Parachærops bicarinatus*).—Crayfish constitute a very serious pest in irrigation areas from their habit of tunnelling in the banks and bottoms of earth irrigation channels, causing considerable loss of water and consequent damage to adjoining fruit-growing land by seepage. The crayfish problem is becoming one of increasing importance, and it appears impossible, with our present knowledge of the question, to evolve practical measures for their control, short of concreting the channels.

Mice (*Mus musculus*).—These are serious pests of crops, stored grain, hay, etc., and are responsible from year to year for considerable losses, and when, owing to the destruction of their natural enemies or other causes, they appear as "mouse plagues," the damage may amount to many thousands of pounds in value.

Birds.—A number of species of small birds, sparrows, starlings, and others, cause considerable damage to fruit and grain crops on the Murrumbidgee Irrigation Areas, and are responsible for important losses every year; in the destruction of these birds hawks and owls do work of outstanding economic value, but their services in this respect are offset by the destruction of many small insectivorous birds.

## SPECIES OF BIRDS ARRANGED ACCORDING TO THEIR DIETS.

### Mammals.

Mice, etc.—

- Threskiornis molucca* (Australian White Ibis).
- Elanus axillaris* (Australian Black-shouldered Kite).

### Birds.

- Falco longipennis* (Little Falcon).

### Fish.

- Phalacrocorax ater* (Little Black Cormorant).

### Beetles (Coleoptera).

Water Beetles (Dytiscidæ, etc.)—

- Erythrogonys cinctus* (Red-kneed Dotterel).
- Charadrius melanops* (Black-fronted Dotterel).
- Threskiornis molucca* (Australian White Ibis).
- Threskiornis spinicollis* (Straw-necked Ibis).
- Notophox nova-hollandiæ* (White-fronted Heron).
- Halcyon sanctus* (Sacred Kingfisher).

Carab Beetles (Carabidæ)—

- Charadrius melanops* (Black-fronted Dotterel).
- Tringa stagnatilis* (Marsh-Sandpiper).
- Threskiornis spinicollis* (Straw-necked Ibis).
- Pomastomus temporalis* (Grey-crowned Babbler).
- Artamus leucorhynchus* (White-breasted Wood Swallow).

## Weevils (Curculionidæ)—

- Himantopus leucocephalus* (White-headed Stilt).
- Threskiornis molucca* (Australian White Ibis).
- Threskiornis spinicollis* (Straw-necked Ibis).
- Colluricincla harmonica* (Grey Shrike-thrush).
- Pomatostomus temporalis* (Grey-crowned Babbler).
- Cincloramphus mathewsi* (Rufous Song Lark).
- Meliphaga penicillata* (White-plumed Honey-eater).

## Scarab Beetles (Scarabaeidæ)—

- Threskiornis spinicollis* (Straw-necked Ibis).
- Pomatostomus temporalis* (Grey-crowned Babbler).
- Myzantha melanocephala* (Noisy Miner).

## Longicorn Beetles (Cerambycidæ)—

- Ninox boobook* (Boobook Owl).

## Tenebrionid Beetles (Tenebrionidæ)—

- Halcyon sanctus* (Sacred Kingfisher).
- Pomatostomus temporalis* (Grey-crowned Babbler).
- Cincloramphus mathewsi* (Rufous Song Lark).

*Paropsis* spp.—

- Halcyon sanctus* (Sacred Kingfisher).
- Pachycephala rufiventris* (Rufous Whistler).
- Colluricincla harmonica* (Grey Shrike-thrush).
- Coracina novæ-hollandiæ* (Black-faced Cuckoo-shrike).
- Myzantha melanocephala* (Noisy Miner).

## Click Beetles (Elateridæ)—

- Halcyon sanctus* (Sacred Kingfisher).
- Pomatostomus temporalis* (Grey-crowned Babbler).
- Cincloramphus mathewsi* (Rufous Song Lark).
- Corcorax melanoramphus* (White-winged Chough).

## Chrysomelid Beetles (Chrysomelidæ)—

- Colluricincla harmonica* (Grey Shrike-thrush).
- Lalage tricolor* (White-winged Triller).
- Myzantha melanocephala* (Noisy Miner).

## Miscellaneous Beetles—

- Charadrius melanops* (Black-fronted Dotterel).
- Himantopus leucocephalus* (White-headed Stilt).
- Threskiornis molucca* (Australian White Ibis).
- Threskiornis spinicollis* (Straw-necked Ibis).
- Notophyx novæ-hollandiæ* (White-fronted Heron).
- Halcyon sanctus* (Sacred Kingfisher).
- Eopsaltria australis* (Southern Yellow Robin).
- Pachycephala rufiventris* (Rufous Whistler).
- Colluricincla harmonica* (Grey Shrike-thrush).
- Coracina novæ-hollandiæ* (Black-faced Cuckoo-shrike).
- Pomatostomus temporalis* (Grey-crowned Babbler).
- Aphelocephala leucopsis* (Western Whiteface).

Miscellaneous Beetles—*continued*.

- Cincloramphus mathewsi* (Rufous Song Lark).  
*Artamus cyanopterus* (Dusky Wood Swallow).  
*Climacteris picumnus* (Brown Tree-creeper).  
*Meliphaga penicillata* (White-plumed Honey-eater).  
*Myzantha melanocephala* (Noisy Miner).  
*Philemon corniculatus* (Noisy Friar-bird).  
*Corcorax melanoramphus* (White-winged Chough).

**Moths (Lepidoptera).**Larvæ of Cup-moths (*Doratifera vulnerans*)—

- Cacomantis osculans* (Black-eared Cuckoo).  
*Eopsaltria australis* (Southern Yellow Robin).  
*Pachycephala rufiventris* (Rufous Whistler).  
*Colluricincla harmonica* (Grey Shrike-thrush).  
*Coracina novæ-hollandiæ* (Black-faced Cuckoo-shrike).

## Cut Worms (Noctuidæ)—

- Threskiornis spinicollis* (Straw-necked Ibis).  
*Ninox boobook* (Boobook Owl).

## Miscellaneous Moths.

- Halcyon sanctus* (Sacred Kingfisher).  
*Colluricincla harmonica* (Grey Shrike-thrush).  
*Coracina novæ-hollandiæ* (Black-faced Cuckoo-shrike).  
*Lalage tricolor* (White-winged Triller).  
*Pomatostomus temporalis* (Grey-crowned Babbler).  
*Cincloramphus mathewsi* (Rufous Song Lark).  
*Meliphaga penicillata* (White-plumed Honey-eater).  
*Myzantha melanocephala* (Noisy Miner).  
*Entomyzon cyanotus* (Blue-faced Honey-eater).

**Bees, Ants, Wasps, etc. (Hymenoptera).**

## Ants.

- Tringa stagnatilis* (Marsh-Sandpiper).  
*Petroica goodenovii* (Red-capped Robin).  
*Colluricincla harmonica* (Grey Shrike-thrush).  
*Cincloramphus mathewsi* (Rufous Song Lark).  
*Artamus leucorhynchus* (White-breasted Wood-swallow).  
*Climacteris picumnus* (Brown Tree-creeper).  
*Philemon corniculatus* (Noisy Friar-bird).

## Native Bees (Apidæ)—

- Halcyon sanctus* (Sacred Kingfisher).  
*Eopsaltria australis* (Southern Yellow Robin).  
*Philemon corniculatus* (Noisy Friar-bird).

Hive Bee (*Apis mellifica*).

- Merops ornatus* (Rainbow Bird).  
*Artamus leucorhynchus* (White-breasted Wood-swallow).

Wasps (Chrysididæ).

*Artamus leucorhynchus* (White-breasted Wood-swallow).

Saw-Flies (*Perga dorsalis*).

*Meliphaga penicillata* (White-plumed Honey-eater).

*Corcorax melanoramphus* (White-winged Chough).

#### Grasshoppers, etc. (Orthoptera).

Grasshoppers or Plague Locusts (Acridiidæ).

*Zonifer tricolor* (Banded Plover).

*Threskiornis spinicollis* (Straw-necked Ibis).

*Notophox nova-hollandiæ* (White-fronted Heron).

*Falco cenchroides* (Nankeen Kestrel).

*Artamus leucorhynchus* (White-breasted Wood-swallow).

Crickets (Gryllotalpidæ).

*Threskiornis spinicollis* (Straw-necked Ibis).

*Falco cenchroides* (Nankeen Kestrel).

Cockroaches (Blattidæ).

*Colluricincla harmonica* (Grey Shrike-thrush).

Earwigs (Forficulidæ).

*Cincloramphus mathewsi* (Rufous Song Lark).

#### Dragon-flies (Odonata).

*Threskiornis molucca* (Australian White Ibis).

*Biziura lobata* (Musk Duck).

*Halcyon sanctus* (Sacred Kingfisher).

*Artamus leucorhynchus* (White-breasted Wood-swallow).

#### Plant Bugs, etc (Hemiptera).

Aquatic Bugs (Corixidæ, etc.).

*Charadrius melanops* (Black-fronted Dotterel).

*Biziura lobata* (Musk Duck).

Tree-hoppers, etc. (Membracidæ, Jassidæ, etc.).

*Cincloramphus mathewsi* (Rufous Song Lark).

Plant-bugs (Pentatomidæ).

*Meliphaga penicillata* (White-plumed Honey-eater).

*Corcorax melanoramphus* (White-winged Chough).

Psyllidæ.

*Pachycephala rufiventris* (Rufous Whistler).

*Pardalotus striatus* (Striated Pardalote).

*Meliphaga penicillata* (White-plumed Honey-eater).

*Entomyzon cyanotus* (Blue-faced Honey-eater).

*Philemon corniculatus* (Noisy Friar-bird).

*Philemon citreogularis* (Little Friar-bird).

#### Flies (Diptera).

Crane-flies (Tipulidæ).

*Philemon corniculatus* (Noisy Friar-bird).



**Miscellaneous Flies.**

- Charadrius melanops* (Black-fronted Dotterel).  
*Anas superciliosus* (Black Duck).  
*Halcyon sanctus* (Sacred Kingfisher).  
*Artamus leucorhynchus* (White-breasted Wood-swallow).  
*Artamus cyanopterus* (Dusky Wood-swallow).  
*Myzantha melanocephala* (Noisy Miner).  
*Philemon corniculatus* (Noisy Friar-bird).

**Spiders (Araneidae).**

- Threskiornis spinicollis* (Straw-necked Ibis).  
*Falco cenchroides* (Nankeen Kestrel).  
*Halcyon sanctus* (Sacred Kingfisher).  
*Pachycephala rufiventris* (Rufous Whistler).  
*Pomatostomus temporalis* (Grey-crowned Babbler).  
*Cincloramphus mathewsi* (Rufous Song Lark).  
*Artamus leucorhynchus* (White-breasted Wood-swallow).

**Centipedes (Chilopoda).**

- Threskiornis spinicollis* (Straw-necked Ibis).  
*Falco cenchroides* (Nankeen Kestrel).  
*Colluricincla harmonica* (Grey Shrike-thrush).

**Molluscs (Mollusca).**

- Biziura lobata* (Musk Duck).

**Crayfish (Yabbies), etc. (Crustacea).**

- Crayfish (Yabbies).  
*Microcarbo melanoleucus* (Little Pied Cormorant).  
*Threskiornis molucca* (Australian White Ibis).  
*Biziura lobata* (Musk Duck).

**Miscellaneous Crustacea.**

- Notophox novaehollandiae* (White-fronted Heron).  
*Halcyon sanctus* (Sacred Kingfisher).

**Weed Seeds, etc.**

- Geopelia placida* (Peaceful Dove).  
*Querquedula gibberifrons* (Grey Teal).  
*Psephotus haematonotus* (Red-backed Parrot).

**Trefoil and other Leguminous Seeds, etc.**

- Phaps chalcopterus* (Common Bronzewing).  
*Ocyphaps lophotes* (Crested Pigeon).  
*Chenonetta jubata* (Maned Goose).  
*Querquedula gibberifrons* (Grey Teal).  
*Polytelis swainsoni* (Green Leek).  
*Platyercus flaveolus* (Yellow Rozella).

**(?) Mistletoe (Loranthus).**

- ?*Barnardius barnardi* (Ringneck Parrot).

**Cultivated Grain.**

- Polytelis swainsoni* (Green Leek).

**Grass Seeds.**

- Geopelia placida* (Peaceful Dove).  
*Porphyrio melanotus* (Bald Coot).  
*Aphelocephala leucopsis* (Eastern Whiteface).  
*Tæniopygia castanotis* (Zebra Finch).  
*Struthidea cinerea* (Apostle Bird).  
*Cacatua galerita* (White Cockatoo).  
*Leptolophus hollandicus* (Cockatoo Parrot).  
*Polytelis swainsoni* (Green Leek).  
*Platycercus flaveolus* (Yellow Rozella).  
*Barnardius barnardi* (Ringneck Parrot).

**Miscellaneous Vegetable Matter.**

- Coturnix pectoralis* (Stubble Quail).  
*Gallinula tenebrosa* (Dusky Moorhen).  
*Porphyrio melanotus* (Bald Coot).  
*Anas superciliosus* (Black Duck).  
*Querquedula gibberifrons* (Grey Teal).  
*Corcorax melanorhampus* (White-winged Chough).  
*Polytelis swainsoni* (Green Leek).  
*Psephotus hæmatonotus* (Red-backed Parrot).

**CONTENTS OF STOMACHS.*****Coturnix pectoralis* Gould, Stubble Quail.**

Tubbo Station, Eurolie, 18 October, 1932 (p.m.), ♂.—*Vegetable matter*: A little unidentifiable vegetable matter. *Miscellaneous*: Sand.

***Geopelia placida* Gould, Peaceful Dove.**

- (a) Murrumbidgee River, Yanco, New South Wales, 27 September, 1932 (p.m.), ♀ (0-33155).—*Seeds*: *Digitaria* sp. (Graminæ). *Polygonum* spp. (Polygonaceæ), the latter only in small quantity.
- (b) Eight miles west of Narrandera, 10 October, 1932 (p.m.), ♂ (0-33156).—*Crop. Seeds*: Total contents of crop were seeds of *Stellaria* sp. (Caryophyllaceæ). *Stomach. Seeds*: Small quantity of the same seeds as in crop. *Miscellaneous*: Sand.
- (c) Eight miles west of Narrandera, 10 October, 1932 (p.m.), ♂ (0-33157).—*Crop. Seeds*: A very large quantity of seeds of *Solanum* sp. (Solanaceæ), about 96 per cent. of the whole, together with other seeds (? gen. et sp.). *Stomach*: The same seeds and in about the same proportions as in the crop.

***Phaps chalcoptera* Latham, Common Bronzewing.**

Near Yanco Agricultural High School, Yanco, 30 September, 1932 (p.m.)  
 ♀ (0-33190).—*Seeds*: 75 per cent. seeds of *Medicago* sp., (Leguminosæ); 25 per cent. seeds (? gen. et sp.).

**Ocyphaps lophotis** Temminck, Crested Pigeon.

Eight miles west of Narrandera, 10 October, 1932 (p.m.), ♂ (0·33188).—*Stomach*. *Vegetable matter*: A few leaves and seeds of *Medicago* sp. (Leguminosæ). *Miscellaneous*: Stomach filled with coarse quartz gravel. *Crop*. *Vegetable matter*: Crop almost empty, a few *Medicago* leaves only.

**Gallinula tenebrosa** Gould, Dusky Moorhen.

Near Yanco Agricultural High School, Yanco, 1 October, 1932 (a.m.), ♀ (0·33116).—*Vegetable matter*: A little fibrous vegetable matter. *Miscellaneous*: Mud.

**Porphyrio melanotus** Temminck, Eastern Swamp Hen (Bald Coot).

- (a) Canal at Yanco Agricultural High School, Yanco, 29 September, 1932 (p.m.), ♀ (0·33112).—*Seeds*: Stomach filled with *Digitaria* sp. (Graminæ). *Miscellaneous*: Clean sand.
- (b) Yanco Agricultural High School, Yanco, 29 September, 1932 (p.m.), ♀ (0·33113).—*Vegetable matter*: A large quantity of practically colourless and very coarse vegetable fibre. *Miscellaneous*: Gravel.
- (c) Five Bough Swamp, Leeton, 3 October, 1932 (a.m.), ♂ (0·33114).—*Vegetable matter*: A quantity of unidentifiable green vegetable matter. *Miscellaneous*: A little fine sand.
- (d) Five Bough Swamp, Leeton, 3 October, 1932 (a.m.), ♀ (0·33115).—*Vegetable matter*: A quantity of fibrous vegetable matter. *Miscellaneous*: Gravel.

**Fulica atra** Linnæus, Coot.

Five Bough Swamp, Leeton, 6 October, 1932, ♀ (0·33117).—*Vegetable matter*: A quantity of fibrous vegetable matter. *Miscellaneous*: Sand.

**Podiceps ruficollis** Vroeg, Little Grebe (Dabchick).

Five Bough Swamp, Leeton, 3 October, 1932 (p.m.), ♀ (0·33191).—*Vegetable matter*: A little unidentifiable vegetable matter. *Miscellaneous*: Gravel.

**Phalacrocorax ater** Lesson, Little Black Cormorant.

Five Bough Swamp, Leeton, 6 October, 1932, ♂ (0·33099).—*Fish*: Bones of a small fish (unidentifiable).

**Microcarbo melanoleucus** Vieillot, Little Pied Cormorant.

Five Bough Swamp, Leeton, 6 October, 1932, ♂ (0·33098).—*Crustacea*: Remains of a large crayfish (*Parachaeraps bicarinatus*). *Remarks*: Five small intestinal worms.

**Erythronys cinctus** Gould, Red-kneed Dotterel.

Lake Euroolie, 5 October, 1932 (a.m.), ♀ (0·33194).—*Coleoptera*: 6 small water beetles (*Bidessus* sp.) and finely broken remains of beetles. *Miscellaneous Insects*: Unidentifiable insect remains. *Miscellaneous*: Sand.

**Lobibyx novae-hollandiae** Stephens, Australian Spur-winged Plover.

Lake Euroлие, 21 October, 1932 (p.m.), ♂ (0·33192).—*Miscellaneous*: A small quantity of mud; a number of pebbles and a few shell fragments.

**Zonifer tricolor** Vieillot, Banded Plover.

Tubbo Station, Darlington Point, 18 October, 1932 (a.m.), ♀ (0·33193).—*Orthoptera*: Remains of immature grasshoppers (*Calataria terminifera*)  
*Miscellaneous*: Coarse gravel.

**Charadrius melanops** Vieillot, Black-fronted Dotterel.

- (a) Swamp, Agricultural High School, Yanco, 29 September, 1932 (p.m.), ♀ (0·33196).—*Coleoptera*: 3 aquatic beetle larvæ (? *Hydrophilus* sp.), and broken remains of beetles. *Diptera*: 8 aquatic larvæ of a midge (Chironomid ?). *Miscellaneous Insects*: Some unidentifiable insect remains. *Miscellaneous*: Sand.
- (b) Agricultural High School, Yanco, 29 September, 1932 (p.m.), ♂ (0·33197).—*Coleoptera*: Broken remains of beetles. *Diptera*: 5 fly larvæ, 4 Muscid and 1 Chironomid. *Miscellaneous Insects*: Unidentifiable insect remains.
- (c) Five Bough Swamp, Leeton, 3 October, 1932 (p.m.), ♂ (0·33198).—*Coleoptera*: Larva of a water beetle (? genera). *Hemiptera*: Immature Water Boatman (*Corixidæ*). *Miscellaneous Insects*: Comminuted insect remains. *Miscellaneous*: Sand.
- (d) Five Bough Swamp, Leeton, 3 October, 1932 (p.m.), ♂ (0·33199).—*Coleoptera*: Finely divided beetle remains, mainly *Carabidæ* (Genera *Sarothrocrepis* and *Ectroma*).
- (e) Darlington Point, 17 October, 1932 (p.m.), ♂ (0·33200).—*Miscellaneous Insects*: Unidentifiable insect remains. *Miscellaneous*: Small pebbles and mud.

**Himantopus leucocephalus** Gould, White-headed Stilt.

- (a) Gogeldrie, near Whitton, 17 October, 1932, ♀ (0·33118).—*Coleoptera*: 2 heads of weevils (*Curculionidæ*), and a large quantity of finely comminuted and unrecognisable beetle remains. *Miscellaneous*: Small quartz pebbles.
- (b) Lake Euroлие, 21 October, 1932, (p.m.), ♀ (0·33119).—*Miscellaneous*: A few coarse pebbles and a little mud.
- (c) Lake Euroлие, 21 October, 1932, (p.m.), ♂ (0·33120). *Animal remains*: A quantity of unidentifiable animal matter. *Miscellaneous*: Mud and gravel.

**Tringa stagnatilis** Bechstein, Marsh-Sandpiper.

Five Bough Swamp, Leeton, 3 October, 1932 (p.m.), ♂ (0·33195).—*Coleoptera*: Finely broken beetle remains, mostly ? *Carabidæ*. *Hymenoptera*: Head of a green-head Ant (*Chalcoponera metallica*). *Miscellaneous Insects*: Finely comminuted fragments.

**Threskiornis molucca** Cuvier, Australian White Ibis.

- (a) Swamp near Yanco, 30 September, 1932 (p.m. night), ♀ (0.33088).—*Coleoptera*: 1 weevil (*Phalidura* sp.—Curculionidæ), and other beetle fragments. *Crustacea*: 16 gastroliths of crayfish (Yabbies), *Parachærapis bicarinatus*. *Miscellaneous* Fragments of animal matter.
- (b) Five Bough Swamp, Leeton, 4 October, 1932 (p.m.), ♂ (0.33089).—*Crustacea*: 5 entire Crayfish or Yabbies (*Parachærapis bicarinatus*), 4 partially digested Crayfish, and 42 gastroliths. *Mammals*: Bones of a small mammal (? mouse or small rat).
- (c) Canal bank near Leeton, 5 October, 1932 (p.m.), ♀ (0.33090) *Coleoptera*: 1 large water beetle (*Hydrophilus* sp.), and 5 larvæ. *Odonata*: 1 Anisopterid dragonfly larva. *Crustacea*: 19 crayfish or Yabbies (small to medium), intact (*Parachærapis bicarinatus*), and 18 gastroliths. *Miscellaneous*: Unidentified animal matter.

**Threskiornis spinicollis** Jameson, Straw-necked Ibis.

- (a) Lake Eurolie, 15 October, 1932 (a.m.), ♂ (0.33091).—*Coleoptera*: 11 weevils (*Phalidura* sp.—Curculionidæ), 1 water beetle (*Hydrophilus* sp.). *Orthoptera*: A quantity of finely comminuted young grasshoppers (*Calataria terminifera*). *Miscellaneous Insects*: A large section of the ? epidermis of a large pupa (? *Zeuzera*). *Miscellaneous*: Stomach filled with thick glutinous mud.
- (b) Springfield Station, Eurolie, 17 October, 1932, ♂ (0.33092).—*Coleoptera*: 1 Carab beetle (*Catadromus* ? *latro*), 1 Carab beetle (*Carenium* sp.), 4 heads of very large beetle larvæ (? Scarabæidæ—Curl Grubs), together with unidentifiable beetle remains, possibly Carabidæ. *Lepidoptera*: 2 large moth larvæ (? Cutworms). *Orthoptera*: 1 oz. of finely divided remains of young grasshoppers (*Calataria terminifera*), 1 immature Mole Cricket (*Gryllotalpa* sp.). *Araneidæ*: 1 large spider. *Chilopoda*: 1 Centipede. *Miscellaneous*: 14 pebbles ranging up to  $\frac{1}{4}$  oz. in weight.

NOTE:—An actual count of the more or less intact examples of Plague Locusts or Grasshoppers (*Calataria terminifera*) gave 100 to about  $\frac{1}{8}$ th of the total bulk of their remains, but the remainder were in an advanced stage of digestion, consequently the total was much greater than the proportion would indicate.

- (c) Springfield Station, Eurolie, 17 October, 1932, ♀ (0.33093).—*Orthoptera*:  $3\frac{1}{2}$  oz. of finely divided and partly digested remains of young grasshoppers (*Calataria terminifera*).
- (d) Springfield Station, Eurolie, 17 October, 1932, ♀ (0.33094).—*Coleoptera*: 1 small beetle elytron, otherwise entirely empty.
- (e) Near Tubbo Station, Darlington Point, on road. 18 October, 1932 (a.m.), ♀ (0.33095).—*Orthoptera*: Stomach crammed with a solid mass of young grasshoppers (*Calataria terminifera*),  $1\frac{1}{8}$  oz. in weight.

**Notophox novae-hollandiae** Latham, White-fronted Heron.

- (a) Eight miles west of Narrandera, 11 October, 1932 (a.m.), ♀ (0.33100).—*Coleoptera*: 107 heads of Gyrinid beetle larvæ, 62 complete and 4 partial Gyrinid beetles (*Macrogyrus latior*—Gyrinidæ), 1 large water beetle larva (*Hydrophilus* sp.). *Crustacea*: 6 Cypris-type Copepods (*Limnadopsis*).
- (b) Marsh 8 miles west of Narrandera, 19 October, 1932 (a.m.), ♂, (juvenile).—*Coleoptera*: 2 entire water beetle larvæ (Dytiscidæ), 1 Gyrinid beetle (*Macrogyrus latior*), and fragmentary remains of water beetles (*Phyllhydrus* sp. *Berosus* sp., and Gyrinidæ). *Orthoptera*: Grasshoppers (*Calataria* sp.). *Crustacea*: 3 *Limnadopsis* sp. *Miscellaneous*: A large quantity of mud.

**Chenonetta jubata** Latham, Maned Goose (Wood-duck).

- (a) Billabong 8 miles west of Narrandera, 12 October, 1932 (a.m.), ♀ (juvenile), (0.33110).—*Vegetable matter*: A small quantity of *Medicago* sp., or *Trifolium* sp. leaves (Leguminosæ). *Miscellaneous*: Sand.
- (b) Marsh 8 miles west of Narrandera, 12 October, 1932 (a.m.), ♀, (juvenile), (0.33111).—*Vegetable matter*: Stomach crammed with leaves of *Medicago* sp. (Leguminosæ). *Miscellaneous*: Sand.

**Anas superciliosus** Gmelin, Black Duck.

- (a) Marsh 8 miles west of Narrandera, 13 October, 1932 (p.m.), ♀ (0.33101).—*Miscellaneous Insects*: A very small quantity of unidentifiable insect remains. *Miscellaneous*: Coarse gravel and mud.
- (b) Marsh 8 miles west of Narrandera, 14 October, 1932, ♀ (0.33102).—*Vegetable matter*: Unidentifiable fibrous vegetable matter. *Miscellaneous*: A quantity of mud and gravel.
- (c) Billabong near Eurolie Bridge, Yanco, 18 October, 1932 (p.m.), ♀ (0.33103).—*Diptera*: One Dipterous larva. *Vegetable matter*: Partly digested and unidentifiable vegetable matter. *Miscellaneous*: Mud and sand.

**Querquedula gibberifrons** S. Muller, Grey Teal.

- (a) Marsh 8 miles west of Narrandera, 13 October, 1932 (p.m.), ♀ (0.33105).—*Miscellaneous*: Sand only.
- (b) Marsh 8 miles west of Narrandera, 13 October, 1932 (p.m.), ♂ (0.33106).—*Seeds*: One seed of *Cucumis myriocarpus* (Curcubitaceæ). *Miscellaneous*: Mud and gravel.
- (c) Marsh 8 miles west of Narrandera, 14 October, 1932, ♂ (0.33107).—*Seeds*: A few seeds of ? *Pultenia* sp. (Leguminosæ), and *Trifolium glomeratum*, (Leguminosæ). *Miscellaneous*: Mud.
- (d) Marsh 8 miles west of Narrandera, 19 October, 1932 (a.m.), ♀ (0.33108).—*Miscellaneous*: Mud and gravel.
- (e) Marsh, 8 miles west of Narrandera, 21 October, 1932, ♀ (0.33109).—*Vegetable matter*: A little fibrous vegetable matter. *Miscellaneous Insects*: Finely broken and unidentifiable insect remains. *Miscellaneous*: Mud and gravel.

**Nyroca australis** Eyton, Australian White-eyed Duck.

Five Bough Swamp, Leeton, 6 October, 1932 (p.m.), ♂ (0-33104).—*Miscellaneous*: Stomach empty except for a small quantity of gravel; no organic matter.

**Biziura lobata** Shaw, Musk Duck.

(a) Five Bough Swamp, Leeton, 3 October, 1932 (p.m.), ♂ (0-33096).—*Molluscs*: 4 *Planorbis* sp., 69 *Bullinus* sp. *Miscellaneous*: Mud and gravel. *Remarks*: 1 tapeworm.

NOTE:—Snails of the genus *Bullinus* are intermediate hosts of the Liver Fluke of Sheep.

(b) Five Bough Swamp, Leeton, 6 October, 1932 (p.m.), ♂ (juvenile), (0-33097).—*Odonata*: 2 Zygopterid dragon-fly larvæ. *Hemiptera*: 3 mature and 6 immature Water Boatmen (*Arctocoris trunctipala*). *Crustacea*: Gastroliths of one large and one small Crayfish or Yabbie (*Parachærops bicarinatus*). *Vegetable matter*: A small quantity of vegetable matter. *Miscellaneous*: Crammed with sand and gravel.

**Elanus axillaris** Latham, Australian Black-shouldered Kite.

Brobenah, near Leeton, 14 October, 1932 (p.m.), ♂ (0-33167).—*Mammals*: 2 mice (*Mus musculus*).

**Falco longipennis** Swainson, Little Falcon.

Near Yanco, 20 October, 1932 (p.m.), ♀ (juvenile) (0-33168).—*Birds*: 2 feet and beak of a Budgerigar (*Melopsittacus undulatus*), 4 feet of birds of two species (? gen. et spp.), and a quantity of feathers and broken bones. *Miscellaneous*: One grain of rice, evidently from the crop of one of the birds.

**Falco cenchroides** Vigors and Horsfield, Nankeen Kestrel.

Darlington Point, 17 October, 1932 (p.m.), ♀ (0-33166).—*Orthoptera*: 1 grasshopper elytra (*Calataria terminifera*), and the legs of a Cricket (*Gryllus* sp.). *Chilopoda*: 38 Centipedes (*Scolopendra morsitans*). *Araneidæ*: Legs of a Huntsman Spider (*Isopeda* sp.).

**Ninox boobook** Latham, Boobook Owl.

(a) Near Yanco Agricultural High School, Yanco, 30 September, 1932 (9.30 p.m.), ♂ (0-33169).—*Lepidoptera*: 51 Bugong Moths (*Agrotis infusa*) together with a quantity of partly digested remains, evidently of the same species.

(b) Near Yanco Agricultural High School, Yanco, 30 September, 1932 (9.30 p.m.), ♂ (0-33170). *Lepidoptera*: 15 larvæ of *Agrotis* sp. (Cutworms). *Coleoptera*: 1 Longicorn Beetle (*Phoracantha recurva*, —Cerambycidæ). *Miscellaneous Insects*: Unidentifiable insect remains.

**Cacatua galerita** Latham, White Cockatoo.

Springfield Station, Eurolie, 17 October, 1932, ♀ (0-33121).—*Seeds*: Seeds of *Erodium* sp. (Graminacæ). *Miscellaneous*: Sand and coarse gravel.

**Cacatua roseicapilla** Vieillot, Galah.

Eight miles west of Narrandera, 10 October, 1932 (p.m.), ♀ (0-33122).—*Crop. Seeds*: Completely filled with 1½ oz. seed (? gen. et sp.). *Insects, Lepidoptera*: 1 small larva (accidental). *Stomach*: Crammed with fine quartz gravel.

**Leptolophus hollandicus** Kerr, Cockatiel (Cockatoo Parrot).

Yanco Agricultural High School, Yanco, 4 October, 1932 (a.m.), ♂ (0-33123).—*Crop. Seeds*: Crammed with seeds of *Erodium* sp. (Graminaceæ). *Stomach. Miscellaneous*: Contained charcoal, sand, and well-digested remains of seed.

**Polytelis swainsoni** Desmarest, Green Leek (Superb Parrot).

- (a) Eight miles west of Narrandera, 10 October, 1932 (p.m.), ♂ (0-33124).—*Crop. Seeds*: Starchy matter of grain, and seeds (? gen. et sp.). *Vegetable matter*: Hundreds of yellow flowers of Milk Thistle? *Stomach. Seeds*: Finely divided particles of seed.
- (b) Eight miles west of Narrandera, 10 October, 1932 (p.m.), ♂ (0-33125).—*Seeds*: 30 seeds of *Erodium* sp. (Graminaceæ) *Vegetable matter*: A quantity of unidentifiable vegetable matter. *Miscellaneous*: A few rounded fragments of wood bearing a superficial resemblance to seeds.
- (c) Eight miles west of Narrandera, 10 October, 1932 (p.m.), ♀.—*Crop. Seeds*: Starchy matter from grain. Seeds of *Medicago* sp. Leguminaceæ. *Vegetable matter*: Leaflets of *Medicago* sp. Rudimentary buds?. *Stomach*: A small quantity of fine sand and broken and partially digested seed.

**Platyercus flaveolus** Gould, Yellow Rosella.

- (a) Murrumbidgee River, Yanco, 27 September, 1932 (p.m.), ♂ (0-33126).—*Seeds*: Broken fragments of seeds of *Erodium* sp. (Graminaceæ), and a few *Medicago* sp. seeds.
- (b) Murrumbidgee River, Yanco, 27 September, 1932 (p.m.), ♂ (0-33127).—*Crop. Seeds*: *Medicago* sp., and *Erodium* sp., seeds. *Stomach. Seeds*: Seeds of *Medicago* sp. (Leguminosæ); and *Erodium* sp. (Graminaceæ). *Miscellaneous*: Sand.
- (c) Murrumbidgee River, Yanco, 27 September, 1932 (p.m.), ♂ (0-33128).—*Seeds*: Seeds of *Medicago* sp. (Leguminosæ); and *Erodium* sp. (Graminaceæ).
- (d) Eight miles west of Narrandera, 10 October, 1932 (p.m.), ♂ (0-33129). *Crop. Seeds*: Crop partially filled with seeds (? spp.). *Stomach. Seeds*: A few seeds similar to those found in crop. *Miscellaneous*: Stomach practically filled with fine sand.

**Barnardius barnardi** Vigors and Horsfield, Ringneck (Mallee) Parrot.

- (a) Murdering Sandhills, Narrandera, 14 October, 1932 (a.m.) ♂ (0-33130).—*Crop. Seeds*: 62 seeds of ? *Loranthus* sp. (Loranthaceæ); 100 seeds of *Erodium* sp. (Graminaceæ). A large quantity (about 80 per cent.) grass seed (? gen. et sp.). *Insects, Lepidoptera*: 10 larvæ and 2 pupæ (accidental). *Stomach*: Sand and charcoal, with fragments of grass seeds.



- (b) Blue Gate Swamp, Yanco, 21 October, 1932 (a.m.), ♂ (0·33131).—*Crop. Seeds*: Seed (? gen. et sp.). *Stomach*: Sand and finely broken seed.

**Psephotus hæmatonotus** Gould, Red-backed Parrot.

- (a) Yanco Agricultural High School, Yanco, 30 September, 1932, ♂ (0·33132). *Vegetable matter*: A little unidentifiable vegetable matter. *Miscellaneous*: Clean white sand and a quantity of small particles of charcoal.
- (b) Macpherson Range, Leeton, 5 October, 1932 (p.m.), ♂ (0·33133).—*Crop. Seeds*: 1,400 seeds (? gen. et sp.). *Stomach*: 114 seeds (? gen. et sp.). *Miscellaneous*: A quantity of small fragments of charcoal.
- (c) Eight miles west of Narrandera, 10 October, 1932 (p.m.), ♂ (0·33134).—*Stomach. Seeds*: Seeds of *Erodium* sp. (Graminaceæ), and unidentifiable seed remains. *Miscellaneous*: Stomach practically filled with very transparent quartz sand and a little charcoal.
- (d) Eight miles west of Narrandera, 10 October, 1932 (p.m.), ♀ (0·33135).—*Crop. Seeds*: Moderately filled with seeds of *Euphorbia* sp. (Euphorbiaceæ); and ? *Plantago* sp. (Plantaginaceæ). *Stomach*: Finely divided and partly digested, unidentifiable seed remains.

NOTE.—Paired with (b).

**Dacelo gigas** Boddært, Laughing Kookaburra.

- Agricultural High School, Yanco, 4 October, 1932 (p.m.), ♂ (0·33171).—*Remarks*: Stomach entirely empty.

**Halcyon sanctus** Vigors and Horsfield, Sacred Kingfisher.

- (a) Agricultural High School, Yanco, 29 September, 1932 (a.m.), ♀ (0·33154).—*Coleoptera*: 1 Tenebrionid beetle (*Pterohelæus* sp.,—Tenebrionidæ) *Paropsis* sp. (a large percentage of the total stomach contents. One Click beetle (Elateridæ), and a large quantity of finely broken fragments of beetles. *Lepidoptera*: 1 large moth larva, and hairs and scales from Lepidoptera. *Hymenoptera*: ? native bee. *Diptera*: Heads of two large flies (? *Rutilia* sp.). *Miscellaneous Insects*: Finely comminuted remains of insects. *Araneidæ*: 2 small spiders.
- (b) Lake Eurolie, 15 October, 1932 (a.m.), ♀.—*Coleoptera*: 2 water beetle larvæ (*Hydrophilus* sp. ?). *Odonata*: Wings of Demoselle dragon-flies. *Miscellaneous Insects*: 2 aquatic larvæ (? Neuropterous). *Crustacea*: 3 Apus and remains of others. *Miscellaneous*: Much finely divided animal matter.

**Merops ornatus** Latham, Rainbow Bird (Bee-Eater).

- Eight miles west of Narrandera, 19 October, 1932 (a.m.), ♂ (0·33163).—*Hymenoptera*: 19 heads and other remains of Hive Bees (*Apis mellifica*).

**Owenavis osculans** Gould, Black-eared Cuckoo.

Near Agricultural High School, Yanco, 30 September, 1932 (p.m.), ♂ (0·33136).—*Lepidoptera*: A large quantity of the remains of larvæ of Cup Moths (*Doratifera vulnerans*).

**Rhipidura flabellifera** Gmelin, Grey Fantail.

Macpherson Range, Leeton, 5 October, 1932, ♀ (0·33145).—*Miscellaneous Insects*: Finely divided and unidentifiable insect remains.

**Petroica goodenovii** Vigors and Horsfield, Red-capped Robin.

Murdering Sand Hills, Narrandera, 14 October, 1932 (a.m.), ♂ (0·33141).—*Hymenoptera*: 26 ants (*Pheidole* sp.).

**Eopsaltria australis** Shaw, Southern Yellow Robin.

Murrumbidgee River, Yanco, 27 September, 1932 (p.m.), ♂ (0·33162).—*Lepidoptera*: Clusters of spines from Cup Moth larvæ (*Doratifera vulnerans*). *Coleoptera*: Unidentifiable beetle fragments. *Hymenoptera*: Head of a bee (? *Halictus* sp.). *Miscellaneous Insects*: Unidentifiable insect remains.

**Pachycephala rufiventris** Latham, Rufous Whistler.

- (a) Near Agricultural High School, Yanco, 30 September, 1932 (p.m.), ♂ (0·33137).—*Coleoptera*: Unidentifiable fragments. *Lepidoptera*: Larvæ of Cup Moths (*Doratifera vulnerans*). *Hemiptera*: Wings of Psyllids. *Araneidae*: Numbers of small spiders (immature).
- (b) Near Agricultural High School, Yanco, 30 September, 1932 (p.m.), ♂ (juvenile) (0·33138). *Coleoptera*: Beetle fragments (? *Paropsis* sp.).

**Colluricincla harmonica** Latham, Grey Shrike-Thrush.

- (a) Murrumbidgee River, Yanco, 12 October, 1932 (p.m.), ♂ (0·33174).—*Coleoptera*: 2 *Paropsis* spp., and other beetle fragments. *Lepidoptera*: 2 larvæ of Cup Moth (*Doratifera vulnerans*). *Orthoptera*: 1 Cockroach egg-case.
- (b) Agricultural High School, Yanco, 28 September, 1932 (p.m.), ♂.—*Coleoptera*: *Paropsis* spp., both adult beetles and larvæ, and many fragments of Chrysomelidæ and Curculionidæ. *Lepidoptera*: Larvæ of Cup Moth (*Doratifera vulnerans*), and the cocoon of a small moth. *Hymenoptera*: Ants. *Chilopoda*: The leg of a Centipede. *Miscellaneous Insects*: Comminuted fragments of insects.

**Coracina novae-hollandiae** Gmelin, Black-faced Cuckoo-Shrike.

- (a) Yanco Agricultural High School, Yanco, 28 September, 1932 (p.m.) ♂ (0·33164).—*Coleoptera*: *Paropsis* spp. *Lepidoptera*: Moth larvæ. *Miscellaneous*: A large piece of mussel shell (accidental).
- (b) Murrumbidgee River, Yanco, 12 October, 1932 (p.m.), ♀ (0·33165).—*Coleoptera*: 2 *Paropsis* sp., and the larva of a beetle ?, together with other beetle remains. *Lepidoptera*: 1 larva of Cup Moth (*Doratifera vulnerans*).

**Lalage tricolor** Swainson, White-winged Triller (Caterpillar Eater).

Macpherson Range, Leeton, 5 October, 1932 (a.m.), ♂ (0-33161).—  
*Coleoptera*: Small Chrysomelidæ. *Lepidoptera*: Scales from  
 Lepidoptera. *Miscellaneous Insects*: Very finely comminuted insect  
 fragments.

**Pomatostomus temporalis** Vigors and Horsfield, Grey-crowned Babbler.

- (a) Agricultural High School, Yanco, 28 September, 1932 (p.m.), ♂  
 (0-33180).—*Coleoptera*: Small fragments. *Lepidoptera*: 12 Lepidop-  
 terous larvæ. *Miscellaneous Insects*: Unidentifiable insect remains.
- (b) Eight miles west of Narrandera, 10 October, 1932 (p.m.), ♀ (0-33182).—  
*Coleoptera*: Tenebrionidæ, Elateridæ, Carabidæ (*Sarothrocrepis* sp.  
 and *Ectroma* sp.), Scarabæidæ (*Onthophagus* sp.), and a quantity of  
 finely divided beetle remains.
- (c) Eight miles west of Narranders, 10 October, 1932 (p.m.), ♂ (0-33183).—  
*Coleoptera*: Curculionidæ and Carabidæ. *Araneidæ*: Spiders.

NOTE.—All stomach contents in fragmentary condition.

- (d) Eight miles west of Narrandera, 19 October, 1932 (a.m.), ♀ (0-33184).—  
*Coleoptera*: Fragments only. *Lepidoptera*: 4 Lepidopterous  
 larvæ. *Araneidæ*: 1 spider. *Miscellaneous Insects*: Finely  
 broken fragments.

**Aphelocephala leucopsis** Gould, Eastern Whiteface.

- (a) Macpherson Range, near Leeton, 5 October, 1932 (p.m.), ♀ (0-33143).—  
*Coleoptera*: One beetle elytron. *Seeds*: *Erodium* sp. (Graminaceæ).
- (b) Macpherson Range, near Leeton, 5 October, 1932 (p.m.), ♂ (0-33144).—  
*Seeds*: *Erodium* sp. (Graminaceæ).

**Cincloramphus mathewsi** Iredale, Rufous Song Lark.

- (a) Agricultural High School, Yanco, 28 September, 1932 (p.m.), ♂  
 (0-33158).—*Coleoptera*: 2 weevils (Curculionidæ), and fragments of  
 unidentifiable beetles. *Lepidoptera*: Scales and hairs from moths.  
*Hymenoptera*: Ants.
- (b) Eight miles west of Narrandera, 10 October, 1932 (p.m.), ♂ (0-33159).—  
*Coleoptera*: Curculionidæ, Tenebrionidæ, and Elateridæ. *Lepid-*  
*optera*: Moth Larvæ. *Hemiptera*: Membracidæ and Jassidæ.  
*Orthoptera*: Forficulidæ. *Araneidæ*: Spiders. *Miscellaneous*:  
 A quantity of unidentifiable fibrous matter (? origin).
- (c) Eight miles west of Narrandera, 10 October, 1932 (p.m.), ♀ (0-33160).—  
*Coleoptera*: Unidentifiable fragments. *Lepidoptera*: Scales and  
 hairs of moths.

**Artamus leucorhynchus** Linnæus, White-breasted Wood-Swallow.

- (a) Five Bough Swamp, Leeton, 3 October, 1932 (p.m.), ♂ (0-33150).—  
*Coleoptera*: 9 small Carab beetles (*Ectroma* sp.). *Hymenoptera*: 6  
 Hive Bees (*Apis mellifica*), 1 drone and 5 workers. 1 winged ant and  
 1 Ruby Wasp (*Stilbum* sp.).

- (b) Five Bough Swamp, Leeton, 3 October, 1932 (p.m.), ♂ (0-33151).—*Hymenoptera* : 1 Ruby Wasp (*Stilbum* sp.). *Odonata* : 1 entire dragon-fly (*Aeschna brevistyla*). *Diptera* : 1 Muscoid fly. *Orthoptera* : Remains of immature Grasshoppers (*Calataria terminifera*). *Miscellaneous Insects* : Unidentifiable insect fragments. *Araneidae* : 1 spider.

**Artamus cyanopterus** Gould, Dusky Wood-Swallow.

- Murrumbidgee River, Yanco, 12 October, 1932 (p.m.), ♂ (0-33149).—*Coleoptera* : Fragments. *Diptera* : Unidentifiable fragments of flies.

**Climacteris picumnus** Temminck, Brown Tree-Creeper.

- (a) Yanco Agricultural High School, Yanco, 28 September, 1932 (p.m.), ♂ (0-33152). *Coleoptera* : Fragments of small beetles. *Hymenoptera* : Heads of ants.
- (b) Macpherson Range, Leeton, 5 October, 1932, ♂ (0-33153).—*Miscellaneous Insects* : Unidentifiable insect remains and a quantity of stout hairs (? from Lepidopterous larvæ).

**Pardalotus striatus** Gmelin, Striated Pardalote.

- (a) Murrumbidgee River, Yanco, 12 October, 1932 (p.m.), ♂ (0-33139).—*Hemiptera* : Main stomach contents : Lerp-scales of Psyllids. *Miscellaneous Insects* : Unidentifiable insect remains.
- (b) Murrumbidgee River, Yanco, 12 October, 1932 (p.m.), ♂ (0-33140).—*Hemiptera* : Lerp-scales of Psyllids. *Miscellaneous Insects* : Unidentifiable insect fragments.

**Melithreptus brevirostris** Vigors and Horsfield, Brown-headed Honey-Eater.

- Macpherson Range, Leeton, 5 October, 1932, ♂ (0-33142).—*Miscellaneous Insects* : Indeterminable insect remains.

**Meliphaga penicillata** Gould, White-plumed Honey-Eater.

- (a) Murrumbidgee River, Yanco, 27 September, 1932 (p.m.), ♀ (0-33146).—*Hemiptera* : Lerp-scales of Psyllidæ. *Miscellaneous Insects* : Unidentifiable insect remains. *Miscellaneous* : Several masses of fruiting threads of a fungus (? mould).
- (b) Murrumbidgee River, Yanco, 27 September, 1932 (p.m.), ♂ (0-33147). *Coleoptera* : Minute fragments of beetles, mainly Curculionidæ. *Hemiptera* : 1 lerp-scale of Psyllid.
- (c) Near Yanco Agricultural High School, Yanco, 30 September, 1932 (p.m.), ♂ (0-33148).—*Hymenoptera* : 1 larva of Saw-fly (*Perga dorsalis*), entire. *Hemiptera* : Head of large Pentatomid bug. *Lepidoptera* : Quantity of hairs and scales of moths. *Miscellaneous Insects* : Fragments.

**Myzantha melanocephala** Latham, Noisy Miner (Soldier-Bird).

- (a) Eight miles west of Narrandera, 10 October, 1932 (p.m.), ♂ (0-33176).—*Coleoptera* : Beetle remains, finely broken and mainly unrecognizable, but Clerids and Paropsis sp. in evidence.

- (b) Eight miles west of Narrandera, 10 October, 1932 (p.m.), ♀ (0-33178).—  
*Coleoptera* : Scarabæidæ and Chrysomelidæ. *Lepidoptera* :  
 Remains of larvæ.
- (c) Eight miles west of Narrandera, 10 October, 1932 (p.m.), ♂ (0-33179).—  
*Coleoptera* : Chrysomelidæ and Curculionidæ, otherwise too  
 fragmentary for identification. *Lepidoptera* : Wings, scales, and  
 hairs of moths, also the remains of a larva. *Diptera* : Muscidæ.

**Entomyzon cyanotus** Latham, Blue-faced Honey-Eater.

Eight miles west of Narrandera, 10 October, 1932 (p.m.), ♀ (0-33175).—  
*Hemiptera* : A large quantity of lerp-scales of Psyllidæ. *Lepidoptera* :  
 A quantity of scales and hairs from Lepidoptera, and remains of a ?  
 Lepidopterous larva. *Miscellaneous Insects* : Too fragmentary for  
 identification.

**Philemon corniculatus** Latham, Noisy Friar-bird.

- (a) Murrumbidgee River, Yanco, 27 September, 1932 (p.m.), ♀ (0-33186).—  
*Hymenoptera* : Heads of 2 bees (? genus). *Hemiptera* : Lerp-  
 scales of Psyllidæ. *Diptera* : Crane flies (*Gynoplistia ? bella*).  
*Miscellaneous Insects* : Unidentifiable insect remains. *Miscellaneous* :  
 Stamens of flowers (?)
- (b) Eight miles west of Narrandera, 10 October, 1932 (p.m.), ♀ (0-33187).—  
*Coleoptera* : Unidentifiable remains. *Diptera* : 6 Crane Flies  
 (*Gynoplistia ? bella*) intact. One unidentifiable fly, and fragmentary  
 Dipterous remains. *Hymenoptera* : 1 native bee (? *Halictus* sp.).  
 4 heads of bees. Remains of 2 Hymenopterous insects (otherwise  
 unidentifiable). Six ants, and finely broken fragments of Hymen-  
 optera.

**Philemon citreogularis** Gould, Little Friar-bird.

Murrumbidgee River, Yanco, 27 September, 1932 (p.m.), (? sex) (0-33185).  
 —*Coleoptera* : Fragments of beetles. *Hemiptera* : Lerp-scales of  
 Psyllidæ. *Hymenoptera* : Heads of 2 bees (? genus). *Miscellaneous*  
*Insects* : Finely comminuted fragments of insects. *Miscellaneous* :  
 Stamens of flowers (?).

**Taeniopygia castanotis** Gould, Zebra Finch.

- (a) Five Bough Swamp, Leeton, 6 October, 1932, ♂.—*Seeds* : *Erodium*  
 sp. (Graminaceæ). *Miscellaneous* : Fine sand.
- (b) Five Bough Swamp, Leeton, 6 October, 1932, ♀.—*Seeds* : *Erodium*  
 sp. (Graminaceæ). *Miscellaneous* : A little fine sand.

**Struthidea cinerea** Gould, Apostle Bird.

Eight miles west of Narrandera, 10 October, 1932 (p.m.), ♂ (0-33189).—  
*Seeds* : *Erodium* sp. (Graminaceæ) *Vegetable matter* : A large  
 quantity of finely divided vegetable matter (some still green),  
 unrecognisable.

**Corcorax melanoramphus** Vieillot, White-winged Cough.

- (a) Macpherson Range, near Leeton, 5 October, 1932 (a.m.), ♂ (0-33172).—*Coleoptera*: 1 Elateridæ, 1 Curculionidæ (*Cubicorrhynchus* sp.), and a quantity of unidentifiable beetle remains. *Hymenoptera*: 14 larvæ of *Perga dorsalis*. *Hemiptera*: Remains of Pentatomidæ. *Miscellaneous Insects*: A large quantity of unidentifiable insect remains. *Seeds*: A large quantity of the seeds of *Sisyrinchium* sp. (Iridaceæ).
- (b) Macpherson Range, near Leeton, 5 October, 1932 (a.m.), ♀ (0-33173).—*Coleoptera*: Finely divided beetle remains. *Miscellaneous Insects*: Unidentifiable insect fragments. *Miscellaneous*: Gravel.

**Sturnus vulgaris** Linnæus, Starling.

- (a) Farm No. 27, Yanco, 12 January, 1927, ♂.—*Coleoptera*: Head of a large beetle. *Lepidoptera*: Mandibles of caterpillar. *Miscellaneous Insects*: ? Mandible of insect. *Vegetable matter*: *Fruit*: A large piece of yellow fruit skin (? plum),  $\frac{3}{4}$  inch square, and one piece  $\frac{1}{4}$  inch square. A large piece of purple prune skin,  $1\frac{1}{2}$  inches x  $\frac{1}{2}$  inch, and two smaller fragments, all with pulp adhering. *Miscellaneous Vegetable matter*: Scales from fruit buds. *Crop*: *Fruit*: The crop completely filled with small pieces of fruit skin, pulp, and fibre.  
NOTE.—Shot in orchard among prune trees.
- (b) Farm No. 1178, Yanco, 1 February, 1927, (? sex).—*Seeds*: 31 seeds of Creeping Saltbush (*Atriplex semibaccatum*).  
NOTE.—Shot in vineyard among sultana vines.
- (c) Farm No. 1178, Yanco, 1 February, 1927, (? sex).—*Coleoptera*: Abdomen and elytra of a small weevil (Curculionidæ). *Vegetable matter*:—*Seeds*: 23 seeds of Creeping Saltbush (*Atriplex semibaccatum*). *Fruit*: A quantity of unidentifiable fruit pulp and skin). *Miscellaneous Vegetable matter*: Spore case of Nardoo (*Marsilea* sp.).  
NOTE.—Shot in vineyard among sultana vines.
- (d) Farm No. 1178, Yanco, 1 February, 1927, (? sex).—*Vegetable matter*: *Seeds*: 53 seeds of Creeping Saltbush (*Atriplex semibaccatum*). *Fruit, etc.*: 7 more or less complete sultana skins, and 13 stems of sultana berries.  
NOTE.—Shot in vineyard among sultana vines.
- (e) Farm No. 27, Yanco, 1 April, 1927, (? sex).—*Coleoptera*: 1 Carab beetle. *Orthoptera*: Foreleg of a small Mole Cricket (*Gryllotalpa* sp.). *Miscellaneous Insects*: A quantity of finely divided insect remains. *Vegetable matter*:—*Fruit*: 3 sultana skins, 10 grape stems and a grape seed. A quantity of grape pulp.  
NOTE.—Shot while feeding on irrigated land near sultana vines.
- (f) Farm No. 27, Yanco, 1 April, 1927, (? sex).—*Vegetable matter*: *Fruit*: 7 entire dried sultanas, and 6 grape stems. *Cultivated grain*: 18 wheat grains. *Seeds*: 12 seeds of Creeping Saltbush (*Atriplex semibaccatum*). *Miscellaneous Vegetable matter*: A considerable quantity of unidentifiable vegetable matter (? bran from wheat). *Miscellaneous*: Quantity of quartz gravel.  
NOTE.—Shot while feeding on irrigated land near sultana vines.

- (g) Farm No. 27, Yanco, 1 April, 1927, (? sex).—*Coleoptera*: Finely divided remains of small black beetles (unidentifiable). *Vegetable matter*: *Fruit*: 9 more or less intact sultana berries. *Seeds*: 72 seeds of Creeping Saltbush (*Atriplex semibaccatum*). *Miscellaneous Vegetable matter*: A quantity of unidentifiable matter (? fruit pulp).  
NOTE.—Shot while feeding on irrigated land near sultana vines.

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