OSNZ BEACH PATROL SCHEME: INFORMATION AND INSTRUCTIONS

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INTRODUCTION

Thousands of kilometres of sea separate New Zealand from the nearest continents, except Australia, which is about 1600 km away. To the east is the Pacific Ocean, to the south are Antarctic waters, and to the west is the Tasman Sea with the Indian and South Atlantic Oceans beyond. Seabirds are well-known long-distance migrants and wanderers. It is not surprising, therefore, that seabirds from all southern oceans of the world have been recorded in the New Zealand region.

Those who have studied birds at sea know that certain identification of the birds seen is often impossible, particularly the penguins and petrels. Therefore, some rarities were first detected by observant beach patrollers. To them we can attribute the only records on the New Zealand mainland of the Adelie Penguin *(Pygoscelis adeliae)*, Bird of Providence *(Pterodroma solandri)*, Stejneger's Petrel *(P. longirostris)*, North Atlantic Shearwater *(Calonectris diomedea)*, Manx Shearwater *(Puffinus puffinus)*, Christmas Island Shearwater *(P. nativitatis)*, Antarctic Skua *(Catharacta maccormicki)* and White-tailed Tropicbird *(Phaethon lepturus)*.

Finding dead seabirds on beaches has revealed not only stragglers to New Zealand but also new species or subspecies. Buller's Shearwater *(Puffinus bulleri)* was first described from a beach specimen. A subspecies of Gould's Petrel *(Pterodroma leucoptera caledonica)* was first recognised in this way, although its breeding place was not discovered until 30 years later. Hutton's Shearwater *(Puffinus huttoni)* was known to many beach patrollers in New Zealand long before its breeding place was discovered in 1965.

New Zealand's geographical position has an important influence on the kinds and numbers of seabirds found on its beaches. It lies nearly at right angles to the prevailing westerly winds. In addition, the side obstructing the westerlies is roughly boomerang-shaped. Thus, it acts as a huge trap for many seabirds which are moving or are being carried eastwards. The winds that seem to cause most casualties on western beaches of the North Island come from west to south-west and are often strong and squally. Perhaps birds swept before these winds are carried north-eastwards, parallel to the South Island's west coast, into the waters off the Wellington and Auckland west coasts (Figure 1). This may explain why, under such conditions, the greatest numbers of dead seabirds are found on these two coasts. Blown towards the land, which they try to avoid, the weaker birds succumb to exhaustion and starvation. Presumably most die by drowning, but sometimes a few are blown inland. The stronger ones survive or perhaps escape through Cook Strait or around North Cape. The numbers cast ashore during and immediately after a storm are undoubtedly related to the numbers

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present offshore and to their condition and health when the stormy weather strikes. However, it is not known how far or for how long dead birds will drift before being cast ashore. Sometimes, a period of exceptionally severe mortality occurs of one or more species, which is called a "wreck".

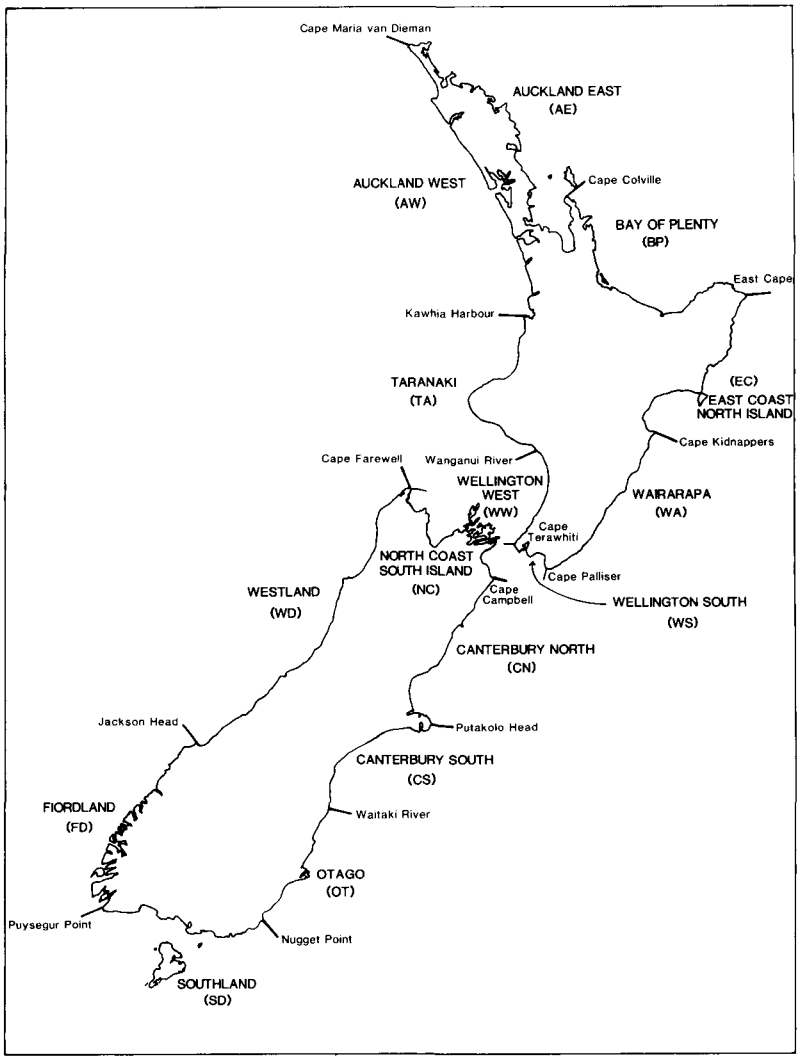

FIGURE 1 — The names, abbreviations and boundaries of the 15 districts of the New Zealand coastline in which beach patrols are grouped

In general, east- and north-facing coasts are not exposed to persistent onshore weather (e.g. Bay of Plenty). Dead seabirds are washed ashore on other than west-facing coasts, of course, although usually in smaller numbers. The number found on other coasts apparently depends mainly on the numbers breeding on nearby islands or migrating along the coast, their condition and whether their movements coincide with severe onshore winds. For example, one of New Zealand's largest wrecks of seabirds was of young Sooty Shearwaters *(Puffinus griseus)* along the east coast of the South Island in May 1961 (Stonehouse 1964), when thousands perished. Emaciated, they were washed ashore or blown inland during a period of rough easterly weather.

Many species of seabirds breed in the New Zealand region and these provide a large proportion of the specimens on beaches in most years. We have three penguins, one albatross, 14 petrels and shearwaters, a storm petrel, two diving petrels, one gannet, seven shags, one skua, three gulls and four terns breeding on the main islands or those close offshore. In addition, almost as many species breed on subtropical and subantarctic islands in the region.

Southern vagrants are occasionally wrecked on our coasts in winter and spring. For example, thousands of Lesser Broad-billed Prions *(Pachyptila salvini)*, Antarctic Prions *(P. desolata)* and Thin-billed Prions *(P. belcheri)*, which breed on several subantarctic islands, were picked up from North Island west coast beaches in June-July 1974 (Veitch 1976). Similarly, hundreds of Antarctic Fulmars *(Fulmarus glacialoides)* were found on the same coastline in September-October 1975 and 1978 (Veitch 1977, 1980).

THE BEACH PATROL SCHEME

Until the Ornithological Society of New Zealand was established in 1939, records of seabirds found dead on our beaches were limited mainly to rarer specimens and large wrecks. Since 1939, the records have steadily increased. The Beach Patrol Scheme was introduced in October 1951. It lapsed a few years later, but was revived in 1960 and has since flourished. Patrollers enter details of their patrols on to standard cards, and the organiser collates these details.

Bull & Boeson (1961) reported the results of patrols between 1939 and 1959. Annual summaries have been published in *Notornis* for cards sent in since 1960. From 1960 to 1967 about 40 patrollers took part in the scheme each year, patrolling about 1200 km of beach. Over the following four years both statistics trebled. Since 1970, the number of patrollers and the distance of beach patrolled gradually increased. The annual averages for 1980-1985 are 235 patrollers and 4347 km. Since the start of the scheme over 200 000 dead seabirds have been found, identified and recorded on cards.

Between 1960 and 1985, nearly 11 500 Beach Patrol Cards were sent in, and they are at present accumulating at the rate of about 700 per year. Each card has records for an average of 4.4 species. Since 1983 the data have

been entered into a computer and we hope that, by 1990, the Society's 50th anniversary, all the data will be in a computer file. This will have several advantages for members:

1. The information will be secure. Copies can be readily made and stored at different locations, whereas at present we have only one copy on bulky cards.
2. The information can be analysed quickly for summary reports and to answer members' requests for information.
3. Analyses will be more accurate.
4. Members will have direct access to the information from the patrols.

Objectives

The objectives of the scheme are:

1. To provide information on the species of seabirds washed up on New Zealand's coasts, where they are from and in which months they occur.
2. To record variations in the mortality of seabirds, particularly large wrecks, their extent and the species involved, and associated factors such as meteorological conditions and the condition of the birds.
3. To increase the chance of banded birds being recovered.
4. To increase the collections of seabirds in museums, particularly of species rarely found in New Zealand waters.
5. To provide specimens that can be studied for anatomy, genetics, parasites and moult.
6. To help members to recognise many species of seabirds.

The scheme therefore provides data and study material which are available to anyone interested in seabirds – distribution, migration or dispersal, moult, taxonomy, anatomy, population dynamics, parasites, genetics, food, and the relationships between distribution and food.

Who takes part?

Most patrollers are members of the Ornithological Society of New Zealand. However, records are welcome from anyone who has an interest in seabirds and is prepared to walk the beaches and collect and record their finds. You may submit cards completed by non-members, as long as you have checked that they have identified the birds correctly and put your name on each card. Beach Patrol Cards and Specimen Record Cards are available free from the Beach Patrol Scheme organiser (name and address on the inside cover of *Notornis*).

Method

In beach patrolling, you walk along a section of beach recording several items of information. You can do patrols at any time of the year, but highest mortalities are usually after storms with on-shore winds. Exposed beaches yield more birds than beaches of fairly enclosed harbours. Casual patrols are valuable and the results should be recorded, but regular patrols yield more information. In some regions, groups of members organise monthly patrols. Check with your Regional Representative before you do a patrol in case someone else has gone ahead of you and you could help somewhere else.

If you are patrolling on your own, walk along and search the high-tide line that proves to have most corpses. When patrolling with a team, spread out and walk along different tidelines to cover the whole beach.

Please get permission before crossing private land to reach beaches. Most landowners, once they know why you want access, are pleased to let you through whenever you want to.

To prevent duplication of records, remove all your finds from the beach. Even if you know the beach you are on is seldom patrolled, someone else may patrol the same beach soon after. Collect the birds in a sack or plastic bag. At the finish of the patrol, or along the way if the bag gets too heavy, sort and record your collection. Keep everything you're not absolutely sure about, and bury the rest well above the highest tideline. Better still, take everything home, record the data at leisure, and dispose of unwanted material at a rubbish dump or in the garden.

The scheme is mainly concerned with seabirds, which are defined as penguins, albatrosses, petrels, shearwaters, storm petrels, diving petrels, frigatebirds, gannets, shags, tropicbirds, skuas, gulls and terns. All *dead* specimens of these birds should be recorded on Beach Patrol Cards. However, you often find other species, some of which may be quite rare, and so you should record all dead birds.

The correct identification of all birds found is of the utmost importance. Do not guess. Here are some recommended reference books:

1. *New Zealand Birds* (2nd edition), by Oliver (1955).
2. *The New Guide to the Birds of New Zealand and Outlying Islands*, by Falla, Sibson & Turbott (1979).
3. *The Handbook of Australian Sea-birds*, by Serventy, Serventy & Warham (1971).
4. *Southern Albatrosses and Petrels – an Identification Guide*, by Harper & Kinsky (1978).
5. *Sea-birds – an Identification Guide*, by Harrison (1983).

If in any doubt about the identity of a bird, don't guess. Get the opinion of someone who knows more than you do. Consult your Regional Representative, who should know what to do.

The remains you find on beaches range from complete birds to wings, tails, feet, or just feathers. Although you usually can't identify small bits of skin and adhering feathers, you should record remains that have standard measurements, such as wings, tails and feet. You may not be able to identify the species from such remains, but you should be able to tell the genus. You often find prion remains as wings only; record these as *Pachyptila* spp. or "Prion spp. (wings)".

Unusual finds

You should know the seabird species for which the Rare Birds Committee needs a full description before your identification can be accepted. The descriptions need to be provided on Unusual Bird Report forms.

Species of ***national level*** rarity are:

Royal Penguin
Rockhopper Penguin *(moseleyi)**
Black-footed Albatross
Snow Petrel
Juan Fernandez Petrel
Phoenix Petrel
Chatham Is Taiko
Stejneger's Petrel
Cory's Shearwater
Wedge-tailed Shearwater*
Manx Shearwater
Wilson's Storm Petrel
South Georgian Diving Petrel
Long-tailed Skua
Antarctic Tern*
Arctic Tern
White-capped Noddy*
White Tern*
Macaroni Penguin
Magellanic Penguin
Chatham Is Albatross*
Providence Petrel
White-naped Petrel*
New Caledonian Petrel
Chatham Is Petrel
Pycroft's Petrel*
Pink-footed Shearwater
Christmas Is Shearwater
Leach's Storm Petrel
White-bellied Storm Petrel
Antarctic Skua
Whiskered Tern
Fairy Tern*
Common Tern
Common Noddy*

Species of ***local level*** rarity are:

Emperor Penguin
Adelie Penguin
Chinstrap Penguin
Soft-plumaged Petrel
Black-bellied Storm Petrel
Red-tailed Tropic Bird*
Brown Booby
Southern Great Skua*
White-winged Black Tern
Crested Tern
Grey Ternlet
King Penguin
Gentoo Penguin
Yellow-nosed Albatross
Grey-backed Storm Petrel
White-tailed Tropic Bird
Australian Pelican
Masked Booby*
Pomarine Skua
Gull-billed Tern
Sooty Tern*

An asterisk indicates a species for which a description is required only when a bird is found outside its usual known dispersal range. Each of these species is fairly common within a part of the New Zealand region. You should send specimens of species of national level rarity to a museum for confirmation of identity, but those of local level rarity should be confirmed by a Regional Representative.

Permits

We have recommended that all specimens be removed from beaches. All seabirds, except the Southern Black-backed Gull *(Larus dominicanus)*, are protected and it is unlawful to keep protected species, dead or alive, without authority. Rare specimens must be donated without delay to the nearest museum or to the National Museum, Wellington. Some museums even need specimens of less rare species, and you can help by asking your nearest museum what, if any, specimens it needs. If a museum does not want your birds and you want to build up a reference collection, *you must apply to a museum for a permit.* This authorises you to keep specimens, although they are legally the property of the museum.

Filling in Beach Patrol Cards

Use this card to record the results of each patrol. *Record only one patrol on each card.* If you find no birds, fill in a card with a nil result. It is as important to know when and why birds are not dying as it is to know when and why they are dying. Complete the cards as soon as you know the identity of the birds. Please print clearly. Send your completed cards to the organiser before the end of each calendar year.

(1) *Name of Beach* – Give the local name, plus the name of the nearest town or geographical feature (to distinguish beaches with the same name – there are several called Ocean Beach). If you patrol only part of a beach, please give some indication of where you started and finished, e.g. "Baylys Beach, near Dargaville, from Baylys Beach access road to 3 km south".

(2) *Kilometres of Beach* – If you do not have a map to work out the distance patrolled, please provide a full description of where you patrolled under "Name of Beach" so that the organiser can determine the length of the patrol.

(3) *District* – Give the abbreviation for the district where the beach is. The coastline of mainland New Zealand and offshore islands (those less than 50 km from the mainland) is divided into 15 districts. The names of these districts, their abbreviations and their topographical boundaries are shown in Figure 1. The extra district "OI" is for Outlying Islands 50 km or more from the mainland.

(4) *Date of Patrol* – Record as day/month/year, e.g. 11/5/87.

(5) *Observer and Address* – Give the initials and surnames of everyone who took part in the patrol or the name of the beach patrol team. *Please print clearly.* Give also the address of the person sending in the card, to whom any queries can be sent.

(6) *Previous Weather and Remarks* – Give a brief description of wind strength and direction during the past week or fortnight, especially if it was up to gale force (60+ km/h).

(7) *Species Found* – List the species found by giving either their full generic and specific names (e.g. *Puffinus bulleri*) or their common names (e.g. Buller's Shearwater). For the most appropriate names to use, refer to Kinsky (1970, 1980).

(8) *Total Number Found* – Give the total number of each species found.

(9) *Age* – Indicate for each species the number of adults, juveniles (subadult) and unknowns. This section is largely intended for species with distinctive differences of bill or plumage colour between adult and juvenile birds, for example, albatrosses, gannets, shags, gulls and terns. However, if you can learn to tell juvenile (first year) from older petrels and shearwaters, such information is very valuable.

(10) *Freshness* – Decide the freshness category for each bird, and then give totals in each category; do not tick categories. Use the following descriptions of each freshness category only as a guide to how long carcasses have been on the beach. Several factors influence the rate of decomposition

and the end result of this process; for example, if complete birds come ashore in moist, cool conditions decomposition is slow but thorough and often only bones remain. By comparison, in dry, hot conditions decomposition of soft parts is rapid, but sometimes the bill, feet, skin and plumage are left intact although shrunken and stiff.

A. *Fresh* (up to 3 days) – Birds that seem to have been ashore only a day or two. Such birds should have decayed little so that the flesh and internal organs are in good condition, the feathers have not begun to slip, any maggots are small, Mallophaga parasites may still be present, and they do not smell decomposed.

B. *Decaying* (1-14 days) – Birds that are smelly and obviously decomposing. For example, the feathers pull out readily, big maggots are inside and the Mallophaga have gone. Later, after about a week, the carcass begins to pull apart easily (e.g. the wings come away from the body).

C. *Dried* (5 days or more) – All soft tissues have either dried or been eaten, the skin is brittle, and usually most feathers are present and firmly attached. The corpse is so stiff that you cannot spread its wings. Generally, such corpses occur in summer, when high temperatures and hot sand dry the birds within a week or so of their being washed ashore.

D. *Skeleton* (from as few as 3 days if scavenged at sea) – All soft tissues are absent, leaving bones with very few feathers attached. Most plates on the beak have detached and the skin over the legs and feet is falling off after about two weeks. Such material can result from an intact corpse that has gradually decayed over many days. However, invertebrates and fish often eat the soft tissues of birds that die at sea before they are washed ashore. The skeletal remains of such birds often look much the same whether you find them within a day of their being washed ashore or a fortnight later.

(11) *Identified By* – Give the initials of the person who identified the birds. If this person did not take part in the patrol, please give full surname.

(12) *Total Seabirds* – Give the total number of *seabirds* found; do not include other birds.

Filling in Specimen Record Cards

Use this card to record bird measurements, sex, age, moult, weight, size of gonads and details about specimens preserved in a museum or private collection. You can use one card for several specimens provided they are of the same species and collected on the same date. Too few patrollers use the Specimen Record Cards, even when the birds are fresh, and so we lose much valuable information. If birds are not pleasant to handle, fill in the easier parts of the card. You don't have to fill in all sections of the card. Measurements, except of uncommon birds, are best done only on specimens a day or two old. Measure only in millimetres, using calipers or dividers.

1. Complete the sections of this card for *Species, Observer and Address, Where Found, Date, Freshness of Specimen* and *Age* in the same way as on Beach Patrol Cards.

2. For the following measurements, use calipers or dividers and a millimetre ruler.

Sex: Indicate male or female only if you have dissected the bird and seen the gonads. Remember that male birds have paired testes, but females have only one (left) ovary.

Moult: State which feather tracts, if any, are being replaced: primaries, secondaries, tail, head feathers, etc.

Bill length: From tip to beginning of feathers on the forehead (Figure 2a). Do not measure if the upper bill plates are missing or if any forehead feathering has been lost.

Bill width: At the gape (where feathers begin at the lower, inner corner of the upper bill plates, Figure 2b).

Bill depth: At the beginning of the forehead feathers (Figure 2c).

Tarsus: From the notch at the rear of the upper joint to the end of the tarsus with the toes bent hard downwards (Figure 2d).

Mid-toe & claw: From the centre of the mid-toe and tarsal joint to the tip of the claw, with the foot flattened (Figure 2e).

Tail: If not in moult, from between the bases of the central feathers to the tip of the longest feather, which must not be loose (Figure 2f).

Size of gonads: Give the maximum length and width of a testis or the ovary.

3. For the following measurements, use a millimetre ruler or tape-measure.

Wing length: Flatten the wing along a ruler and measure from tip to the carpal flexure (first joint), with the wing in a closed position (Figure 2g). That is, do not straighten the wing or its primaries. Do not measure if the longest primary is missing, broken or in moult. Check that the wing has not become bent by drying out. (Note: In Diomedeidae, Pelecanoididae and Procellariidae, except prions, the outermost primary should be longest – if not, then moult is still in progress; in prions and storm petrels, however, the second primary is always longest).

Total length: Measure from bill tip to tail tip.

Wing span: With the wings straightened, measure from wing tip to wing tip over the top surface.

Weight: Weigh a bird only if it is fresh, intact, dry and free of sand. State the accuracy of your scales, for example, ± 20 g.

Parts preserved and depository: If any part of the bird is preserved, say which part and where it is held.

Depository no. or observer's reference no.: Give the number if the preserved parts have been given one.

Identification confirmed by: Give the initials and surname of the person in authority who has confirmed your identification, or give a description of the bird.

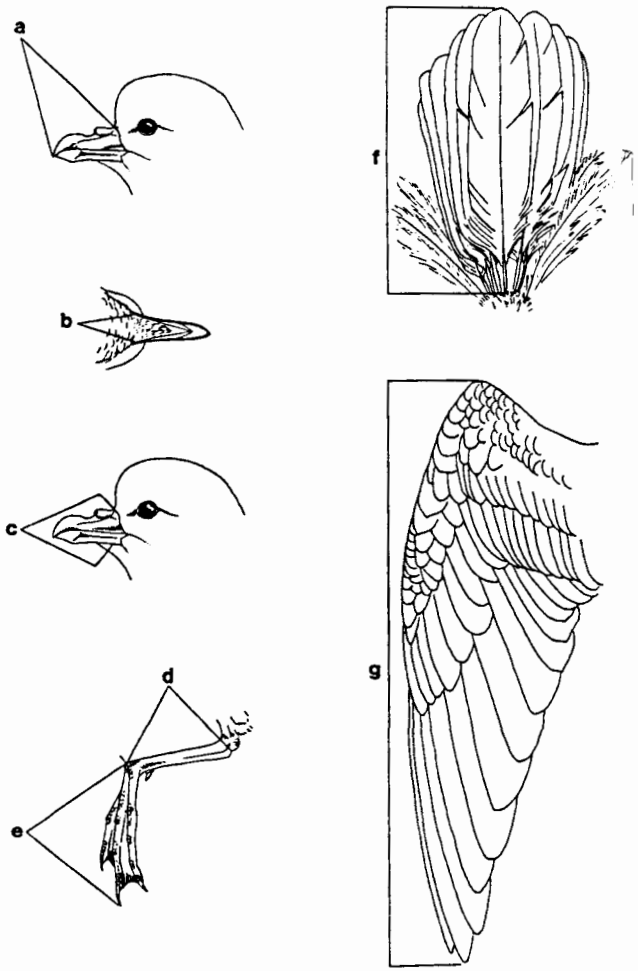

FIGURE 2 — Parts of a Fairy Prion *(Pachyptila turtur)* to show where to take measuements of (a) bill length, (b) bill width, (c) bill depth, (d) tarsus, (e) mid-toe and claw, (f) tail, and (g) wing.

Figure by P. Morse.

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SHORT NOTES

First Record of the Australian Little Bittern *(Ixobrychus minutus)* in New Zealand

On 5 February 1987 an apparently exhausted and starving small bittern was caught by a council worker in Westport. The bittern was first seen walking past a supermarket several hundred metres from the saltmarshes of the lower Buller River. It was handed to the Royal Society for the Prevention of Cruelty to Animals and one of its officers, Cindy Cairns, was given care of the bird. The bittern fed readily on tadpoles, bullies, freshwater invertebrates and a supplement of oxheart.

Local Wildlife Officers, Bob Simpson and Nigel Miller, were told about the bird a week later. They in turn asked us to assist with identification by describing, measuring and photographing the bird on 20 February. After rehabilitation the bittern was released into Birchfield swamp north of Westport.

The bird was identified as a Little Bittern *(Ixobrychus minutus)* and the OSNZ Rare Birds Committee later confirmed the identification .

Description

Size: A tiny bittern standing c.200 mm high, usually in a crouched posture.

Head and body: Forehead and crown were dark chestnut with black flecks. A well-defined dark chestnut line ran down the midline of the neck and breast. Otherwise the plumage was pale yellow-buff strongly streaked with black and chestnut lines. The lower breast was plumed and was puffed out during threat displays. Back and mantle were chestnut-brown with large black flecks and pale buff feather edges. Belly and flanks were whitish buff with brown streaks.

Wings: Upper wing-coverts were brown with buff edges. Primaries were black with faint chestnut edges. The under wing-coverts were whitish, and primaries grey.