

- 1 *Anisomys imitator*
- 2 *Canis familiaris*
- 3 *Dactylonax palpator*
- 4 *Dasyurus albopunctatus*
- 5 *Dendrolagus finschi*
- 6 *Dobsonia* (Large)
- 7 *Dobsonia* (Small)
- 8 *Eudromicia caudata*
- 9 *Halicore dugong*
- 10 *Hydromys habbema*
- 11 *Hydromys asper*
- 12 *Hydromys chrysogaster*

2 km E MHW/Hehmina  
3800m

7 km NE MHW/Hehmina  
3600m

Lake Habbema  
3225m

9 km NE Lake Habbema  
2810m

Dele River  
2200m

Balin River  
1600m

18 km SW Derahard Gap  
2150m

15 km SW Derahard Gap  
1810m

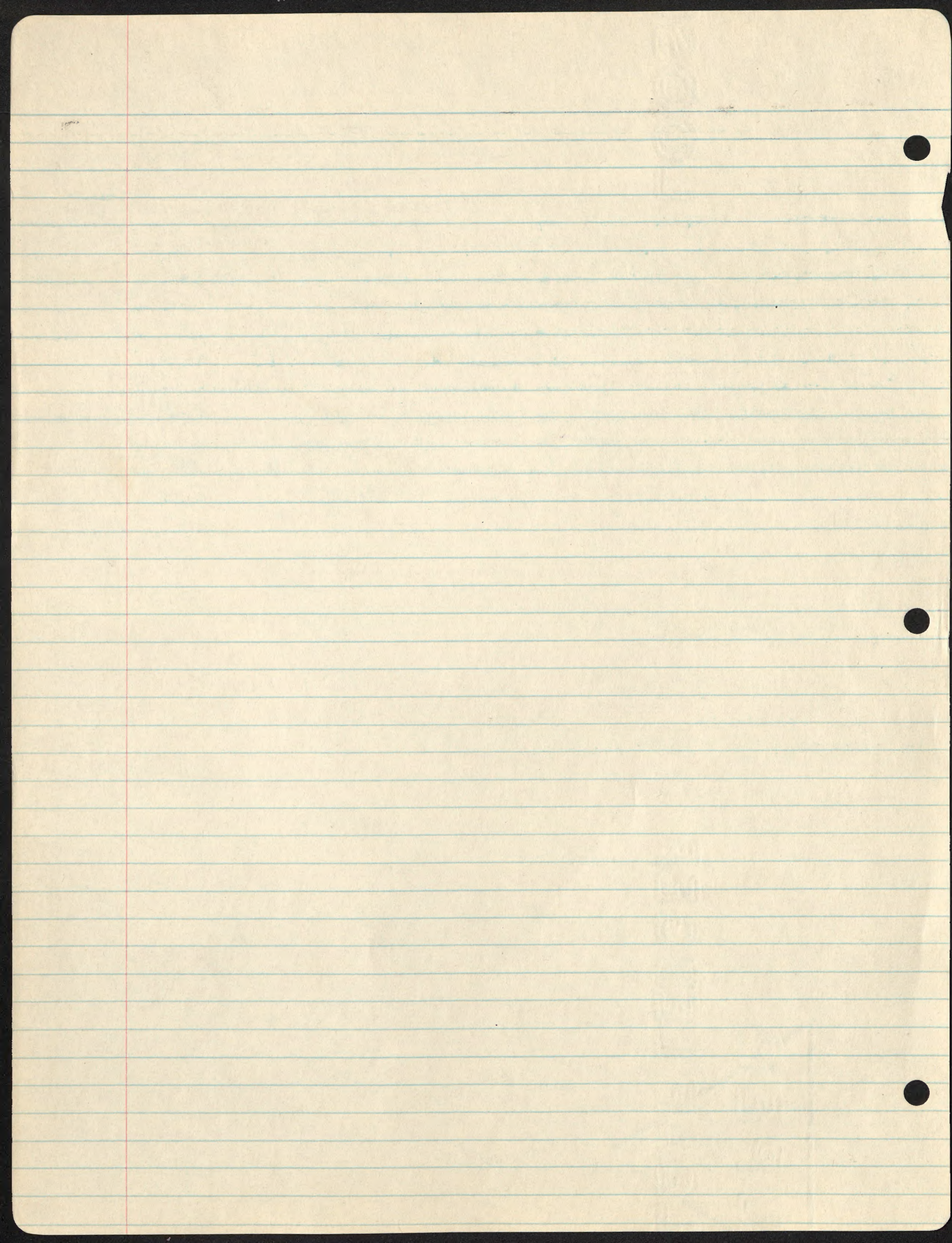
6 km SW Derahard Gap  
1200m

4 km SW Derahard Gap  
850m

Derahard Gap  
60m

Hollandia  
50m 1000



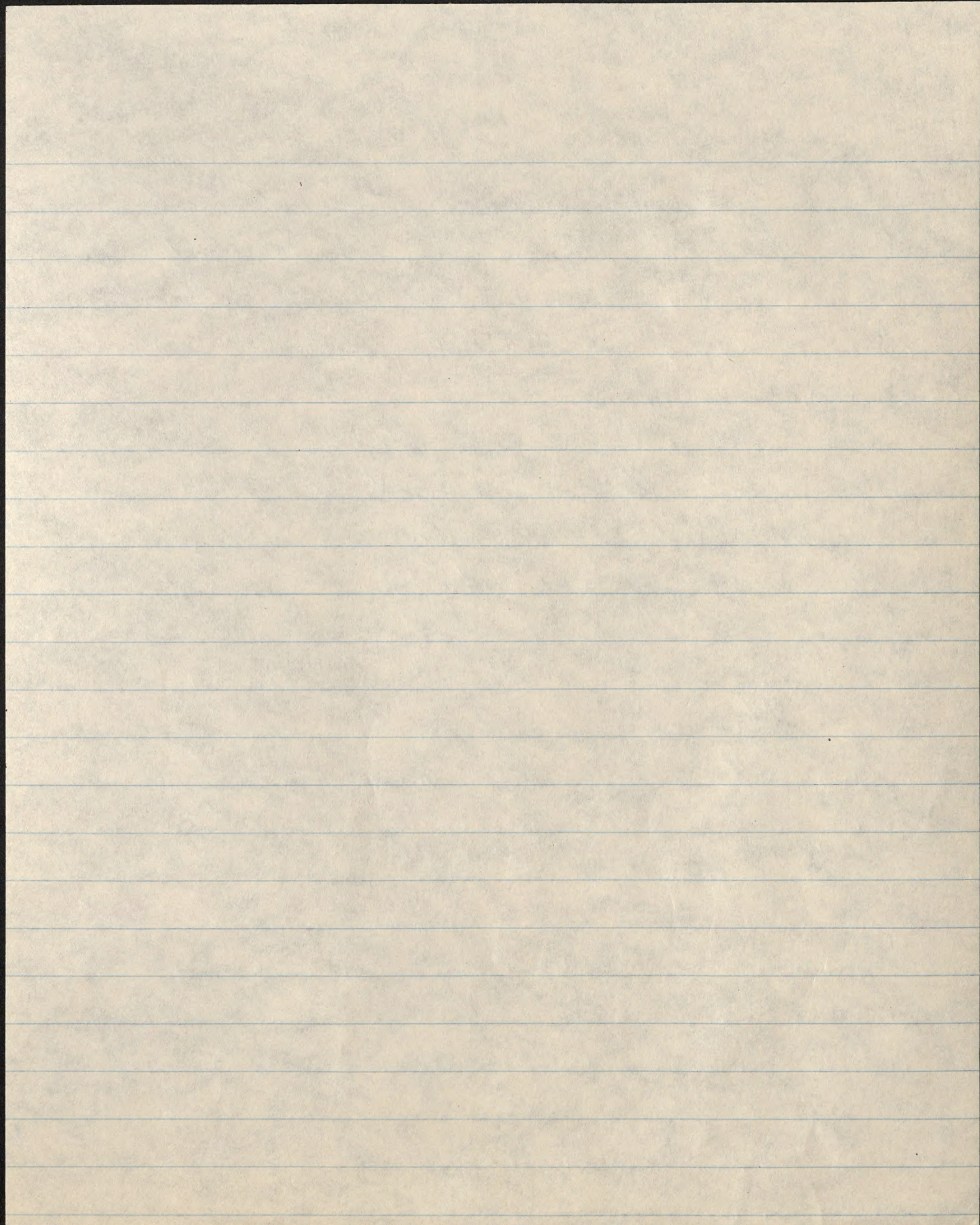




Arvicanx imitator - This large rat with the laterally compressed lower incisors were taken at 4 different camps ranging in altitude from 2800 m to 1200 m.

Four specimens were obtained at the 2800m camp. One of these was caught in a trap set in a well defined runway on the floor of the mossy beech forest. The trail though it had a definite direction seemed to avoid the heavy littered areas following a course through the open brushy undergrowth over the moss covered forest floor. Two other specimens were taken in a somewhat similar habitat 100 m below the camp. The other specimen recorded from the camp was brought in by natives. It was probably taken at a lower altitude for the leaves in which it was exposed were dry and the skin itself was dry as if having been caught a day or two previously. It had apparently been taken





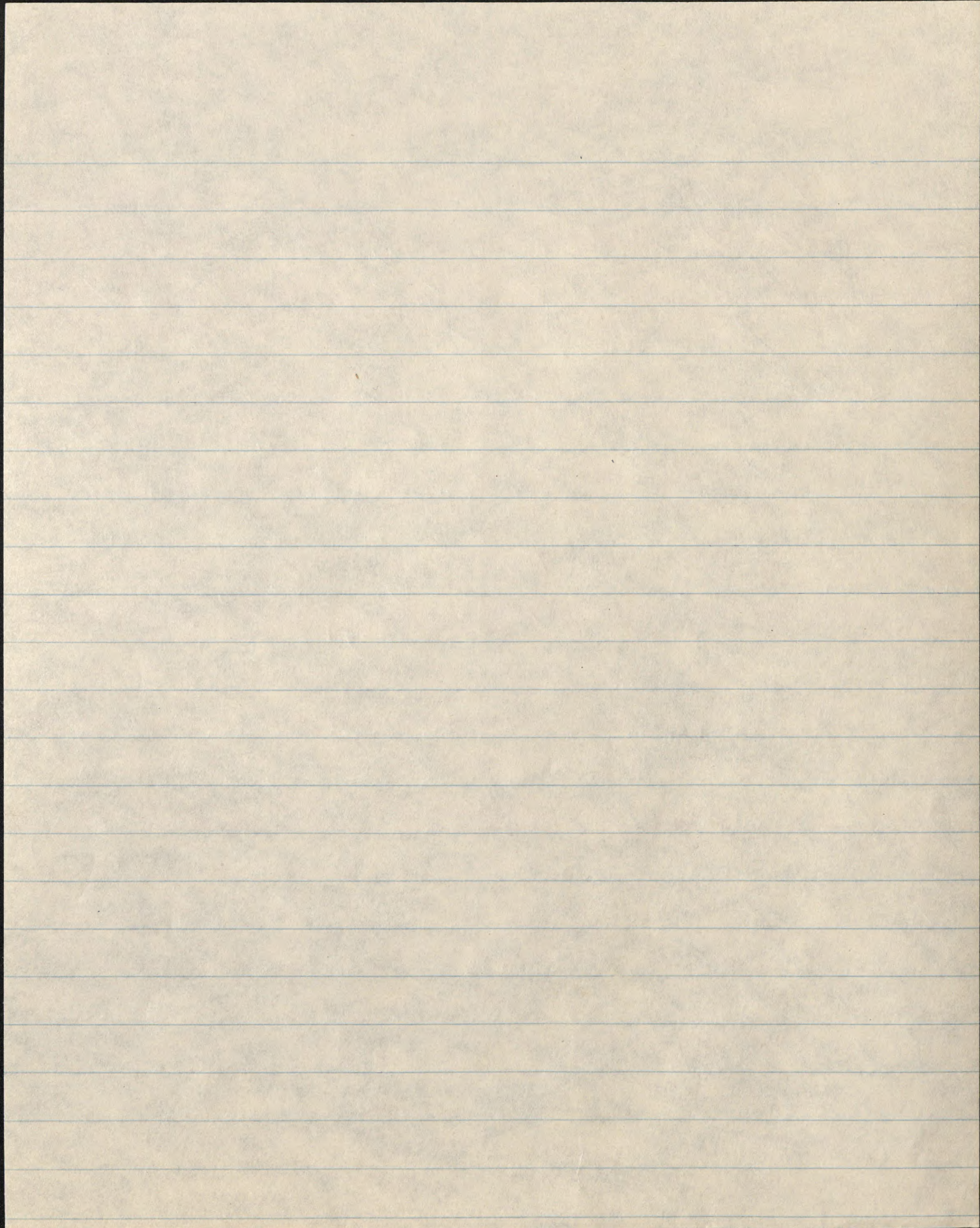


in a dead fall.

At the Bel River camp 98 specimens were prepared all of which were brought in by the natives. These were taken in dead falls as described on p. —. In this series there were two or more lactating ♀s. The fact that immature animals as well as lactating ♀s were taken would indicate that the breeding season, if there is one, must be long. The mammary formula is 1-1 anteriorly and 2-2 posteriorly. The anterior pair being situated rather high on the side just back of the front legs where the dark color of the dorsal surface meets the light color of the ventral. On the chest of many of the mammals between the front legs there is an oily appearing spot varying in size from 5 to 8 mm in length. I have no information as to its use.

A single ♀ specimen was taken at the







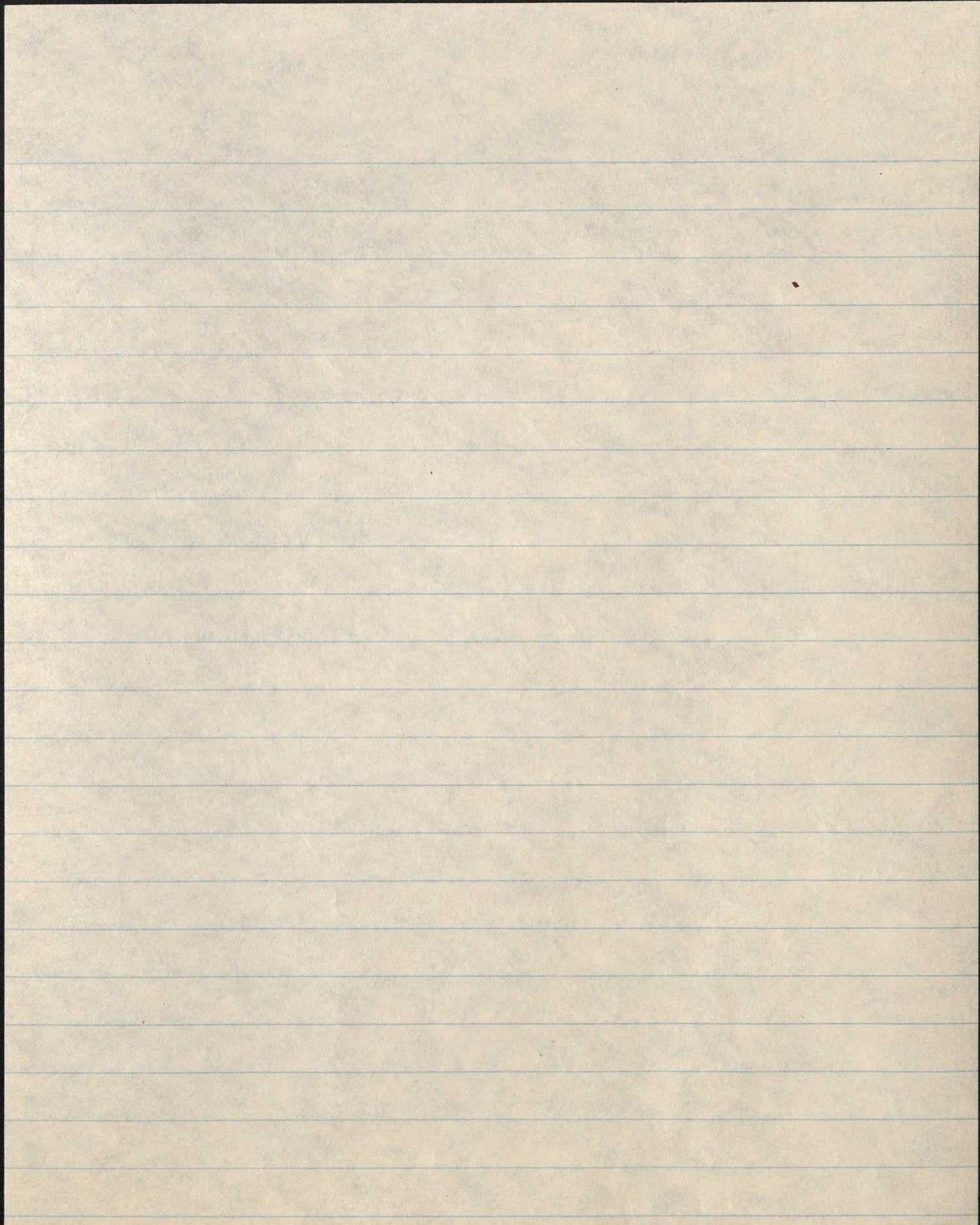
2150 m camp. The trap in which it was caught was set in a well defined runway through a bamboo thicket at the base of a large tree in the rather open mossy forest.

These runways were quite common in this region and may or may not have been made by Amisomys for other mammals as Thomomys, and Peroryzetes, were found to use them as well. The mammae of this individual were enlarged but there was no sign of lactation nor were there embryos or enlarged uteri.

The specimens were taken at the 1800 m camp although they probably occurred there.

At the 1200 m camp 2 specimens were obtained. One <sup>was</sup> brought in by a collector, and the other was taken in a trap set on a log forming a bridge across a stream. This stream flows in a V shaped rocky canyon with steep moist walls vegetated with mossy forest. The trees of the primary

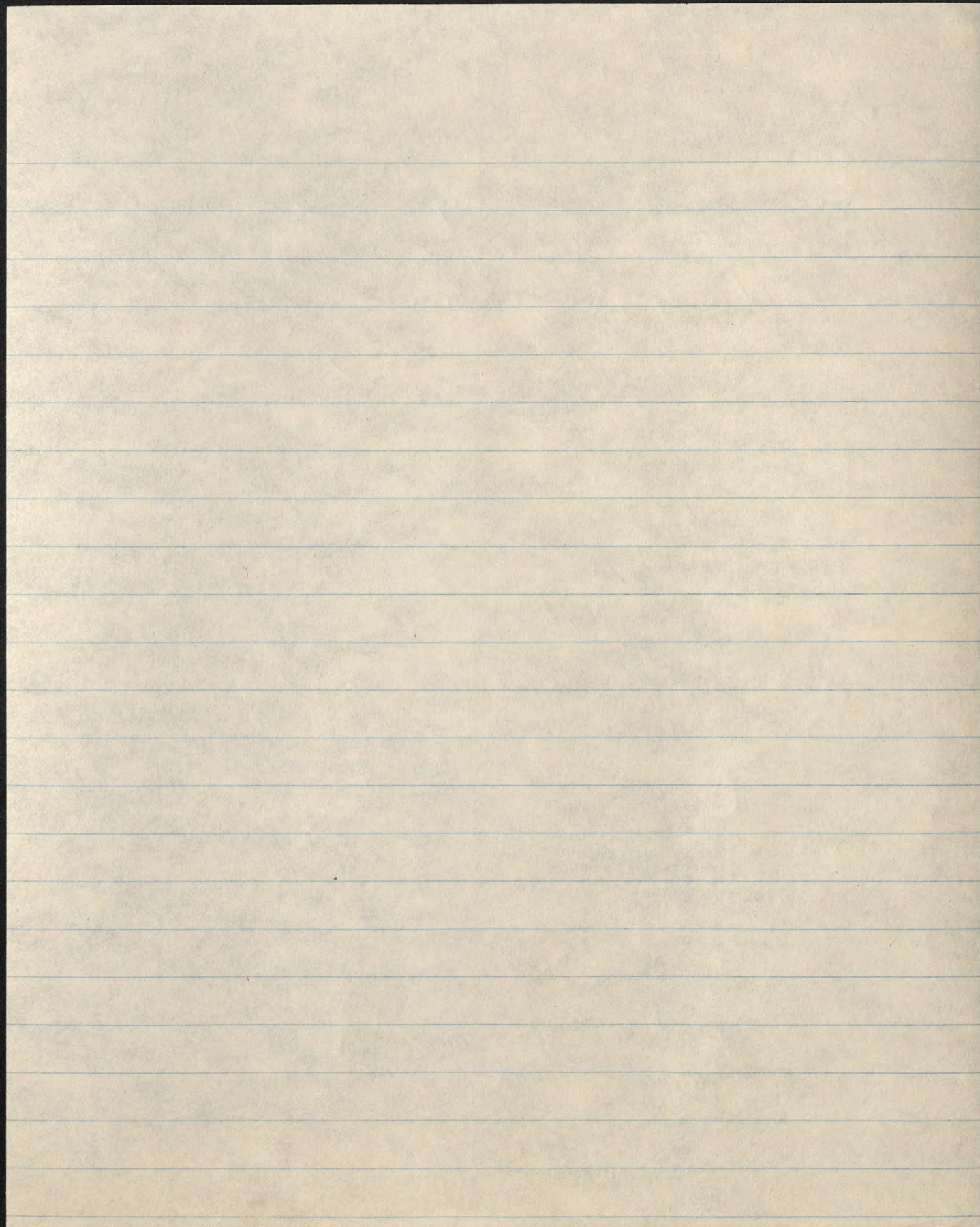






forest were scattered letting in considerable light to the moderately thick undergrowth and second story vegetation.







Anisomys imitator. This large rat with the laterally compressed lower incisors was taken at 4 different camps, ranging in altitude from 2800 m. to 1200 m.

Four specimens were obtained at the 2800 m. camp. One of them was caught in a trap set in a well defined runway on the floor of the mossy beech forest. This trail, though it had a definite direction, served to avoid the heavy littered areas, following a course through the open bushy undergrowth over the moss covered forest floor. Two other specimens were taken in a somewhat similar habitat 100 m. below the camp. The other specimen recorded from the camp was brought in by natives. It was probably taken at a lower altitude, for the leaves in which it was wrapped were dry and the skin itself was dry, as if it had been caught a day or two before. It had apparently been taken in a deadfall.

At the Bele River Camp 98 specimens were prepared, all of which were brought in by the natives. These were taken in deadfalls as described on p. . In the series there were two or more lactating ♀'s. The fact that immature animals as well as lactating ♀'s were taken would indicate that the breeding season, if there is one,



Alouatta palliata. This large red with the intensity of

placed lower in the forest was taken at a different camp, and the

altitude from 1500 m. to 1600 m.

Some specimens were obtained at the 1600 m. camp. One of them

was caught in a trap set in a well-wooded area on the floor of

the mossy forest. This animal, though it was a juvenile

individual, seemed to have the heavy-limbed aspect, following a

course through the open bushy undergrowth of the moss-covered

lower forest. Two other specimens were taken in a somewhat similar

habitat 100 m. below the camp. The other specimen recorded from

the camp was brought in by natives. It was probably taken at a

lower altitude, for the leaves in which it was wrapped were very

fresh and the animal was fat, as it had been caught a day or two

before. It has apparently been taken in a locality

in the Petén River valley. 25 specimens were taken, all of which

were brought in by the natives. These were taken in localities

described on p. 1. In the series there were two or more females

to 1's. The fact that immature animals as well as adults were

taken would indicate that the breeding season, if there is one,



must be long. The mammary is 1-1 anteriorly and 2-2 posteriorly, the anterior pair being situated rather high on the side just back of the front legs, where the dark color of the dorsal surface meets the light color of the ventral. On the chest of many of the mammals, between the front legs, there is an oily appearing spot varying in size from 5 to 8 mm. in length. I have no information as to its use.

A single ♀ specimen was taken at the 2150 m. camp. The trap in which it was caught was set in a well defined runway through a bamboo thicket at the base of a large tree in the rather open mossy forest. These runways were quite common in this region, and may or may not have been made by Anisomys, for other mammals, as Uromys and Peroryctes, were found to use them as well. The mammae of this individual were enlarged but this was no sign of lactation nor was there an embryo or enlarged uterus.

No specimens were taken at the 1800 m. camp, although they probably occurred there.

At the 1200 m. camp 2 specimens were obtained. One was brought in by a collector, and the other was taken in a trap set on a log forming a bridge across a stream. This stream flows in a V shaped rocky canyon with steep moist walls vegetated with mossy forest.







The trees of the primary forest were scattered, letting in considerable light to the moderately thick undergrowth and second story vegetation.



The views of the primary forces were ascertained, being in considerable

the light of the knowledge with which they were furnished, and a copy was

attached.

SECURITY MATTER



Wm B. Richardson  
1958

# Anisomys

Oct 23 9 km N Lake Habbema, Netherlands New Guinea 2800m.

1 in 29 stick traps. The trap was set in a runway through the open bush at the edge of the mossy forest. The trail was well defined and directional. Although there was little in the vicinity the trail was <sup>not</sup> beneath the logs and such but rather it followed the more open areas where there are ~~the~~ scattered thin bush thickets and open moss and lichen covered forest floor.

Oct 28 9 km N Lake Habbema, Netherlands New Guinea 2800m.

1 brought in by natives. It had probably been brought up from below for the leaves in which the nest was reposed were dry and the skin itself was dry as if having been caught a day or more ago. It was apparently taken in a dead fall.

Oct 30 9 km N Lake Habbema, Netherlands New Guinea 2700m.

1 in 29 stick traps. Brought in and prepared by collectors.

Nov 5 9 km N Lake Habbema, Netherlands New Guinea 2700m.

1 in 29 stick traps. Brought in by collectors.

Nov 8 Belu P. 18 km N Lake Habbema, Netherlands New Guinea 2200m.

1 brought in by natives.

Nov 12 Belu P. 18 km N Lake Habbema, Netherlands New Guinea 2200m.

1 brought in by natives.

Nov 14 Belu P. 18 km N Lake Habbema, Netherlands New Guinea 2200m.

2 brought in by natives.

Nov 15 Belu P. 18 km N Lake Habbema, Netherlands New Guinea 2200m.

2 brought in by natives.

Nov 16 Belu P. 18 km N Lake Habbema, Netherlands New Guinea 2200m.

2 brought in by natives.



Nov 17 Belu R. 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
2 brought in by natives.

Nov 19 Belu R. 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
6 brought in by natives.

Nov 20 Belu R. 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
2 brought in by natives.

Nov 21 Belu R. 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
1 brought in by natives.

Nov 22 Belu R. 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
4 brought in by natives.

Nov 23 Belu R. 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
6 brought in by natives. Two adult females were or had been recently suckling young ( $1\frac{1}{2}$ ). The second pair was set apart on the side of the head and back of the lower edge of the skull blade.

Nov 24 Belu R. 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
9 brought in by natives. Between the fore legs there is a spot of greasy or oily hair, which leads me to believe that there is an "oil patch" in this vicinity although my eyes cannot detect any modified skin structure below the greasy hair.

Nov 25 Belu R. 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
8 brought in by natives.

Nov 26 Belu R. 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
7 brought in by natives.

Nov 27 Belu R. 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
4 brought in by natives.



## Anisomys

Nov 28 Bel. R. 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
11 brought in by natives.

Nov 29 Bel. R. 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
5 brought in by natives.

Nov 30 Bel. R. 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
4 brought in by natives.

Dec 1 Bel. R. 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
5 brought in by natives.  $\text{mam. } \frac{1}{1} \frac{2}{2}$

Dec 2 Bel. R. 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
8 brought in by natives.

Dec 3 Bel. R. 14 km N Lake Habbema, Netherlands New Guinea 2200m.  
2 brought in by natives.

Dec 4 Bel. R. 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
10 brought in by natives.

Feb 4 18 km SW Bernhard Camp Idenburg R. Netherlands New Guinea 2150m.  
1 in 224 rat traps. Taken in trap set in  
runway about the base of a large tree. The region  
or rather the habitat was mossy forest with bamboo  
undergrowth. About the base of the tree, however, there  
was an unusually dense bushy thicket which  
protected or gave cover to the animal. The  $\text{te.}$   
 $\text{2}$  were enlarged but no signs of lactation nor  
was there any emb. or an enlargement of the  
stomach.

Mar. 2 6 km SW Bernhard Camp Idenburg R. Netherlands New Guinea 1200m.  
1 in 27 stick traps. Trap set on a large  
log crossing a stream. The stream itself flows  
in a  $\text{V}$  shaped rocky canyon basin. The log  
formed a bridge across the creek from one  
vegetated slope to another. Habitat is  $\text{steep}$  moist  
hill slope vegetated with thick undergrowth and



second story vegetation. The primary forest trees  
are scattered and do not form a complete  
canopy. Stomach contents was empty.  
Murray glands. - 2 posterior pair and 1 anterior  
pair.

Mar. 5 6 Km. SW Burband Camp, Humburg R., Netherlands New Guinea 1200m.  
1 in 27 stub trays. Brought in by  
collectors. Stomach empty.

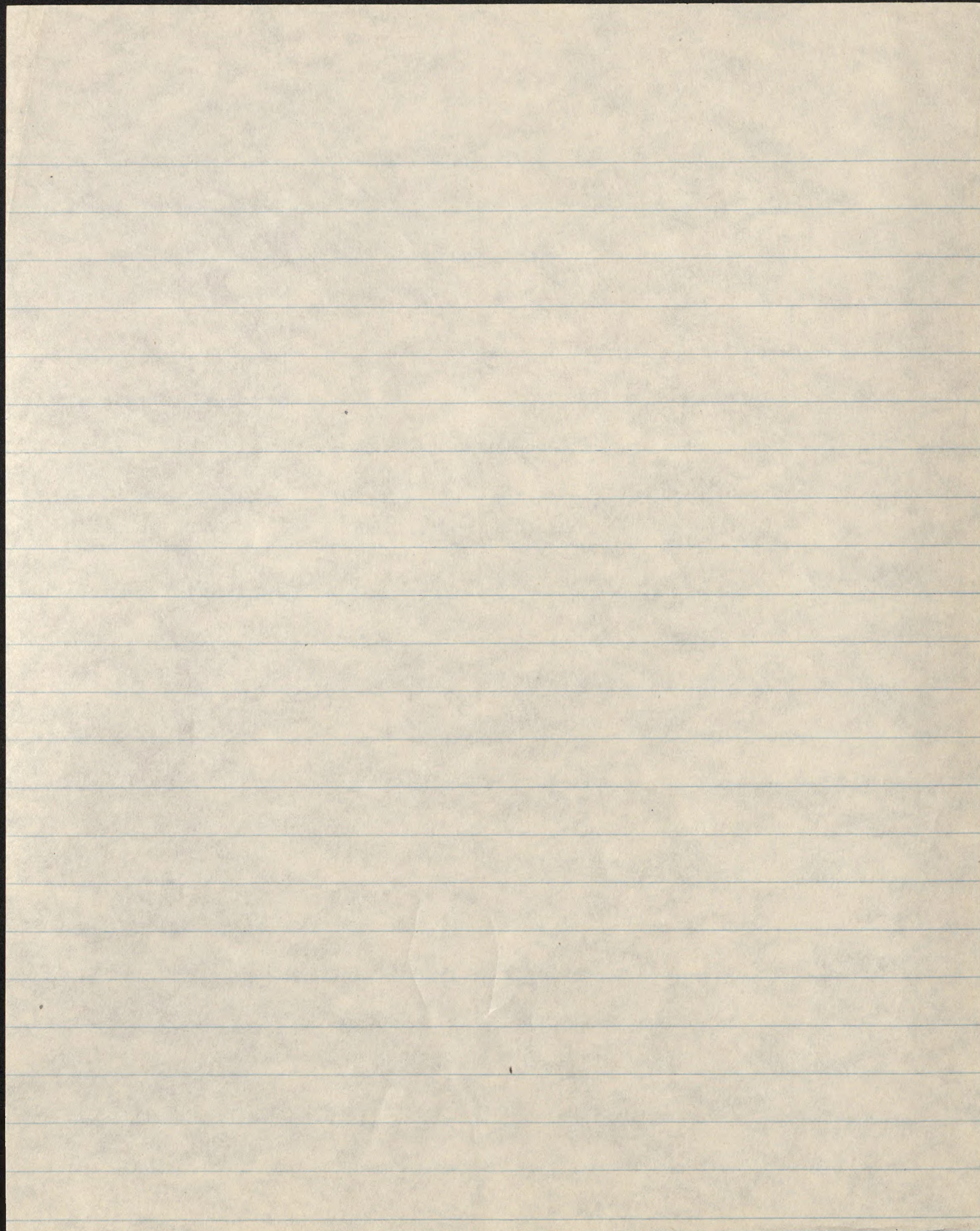


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Canis familiaris - No dogs were taken from the vicinity of Lake Habberna or above although dung and tracks of them were commonly seen up as high as 4000 m. on the ridges or along the muddy foot paths. While camped there I did not hear them vocalize but Mr. L. J. Bruce reports having heard them howl on several different occasions one of which was from a limestone bluff above the 3600 m camp. Examination of a number of scats would indicate that these animals fed principally upon Mallomys and Stenomys (29) which were found commonly at the higher altitudes. Fruit, berries, and insects seemed to make up the remainder of their diet. On two different occasions dogs were caught in steel traps but in each instance the animal managed to pull loose.

At the 2800 m and 2200 m camps no dogs were seen or heard. It is probable that they occasionally come into the ranges



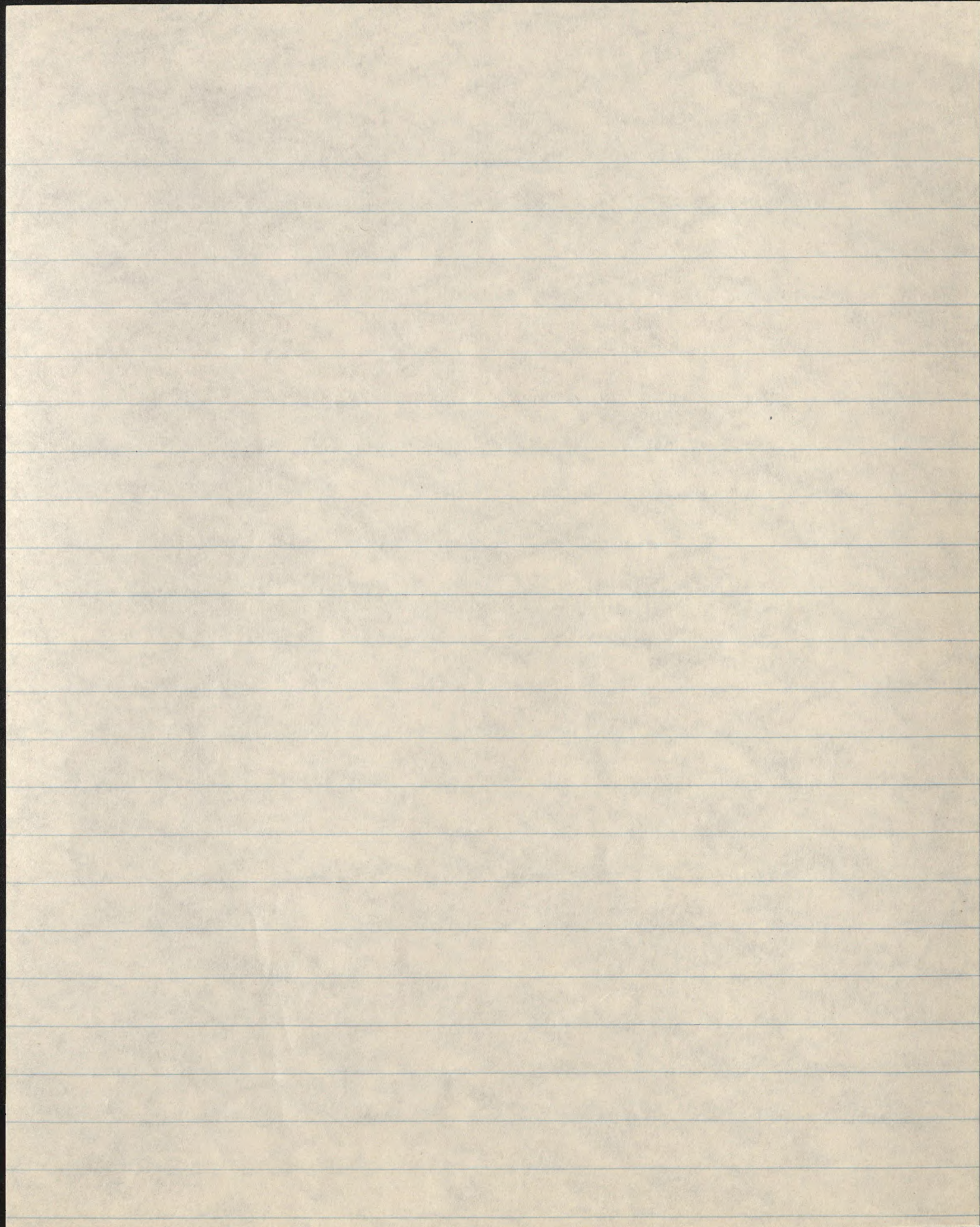




forest country although there was no evidence of it. The natives of the region did not have domestic dogs.

One individual, the only one seen in the Grand Valley, was purchased from the natives near the Balim River camp. This half wild animal belonged to a native who told us that he had dug it out from the hill side when it was small. After much bargaining it was purchased for the sum of 30 cowrie shells the highest price paid for any article obtained from the natives. The beast was small about 300 mm high at the shoulders, 800 mm total length, and 350 mm tail length. These figures are estimations rather than actual measurements. The color was that of black and white in broad marks, the latter color predominating the anterior half. The tail was held in a slight upward curve, not looped. The ears were erect and pointed. The hair was moderately short and with a general sleek shiny appearance.





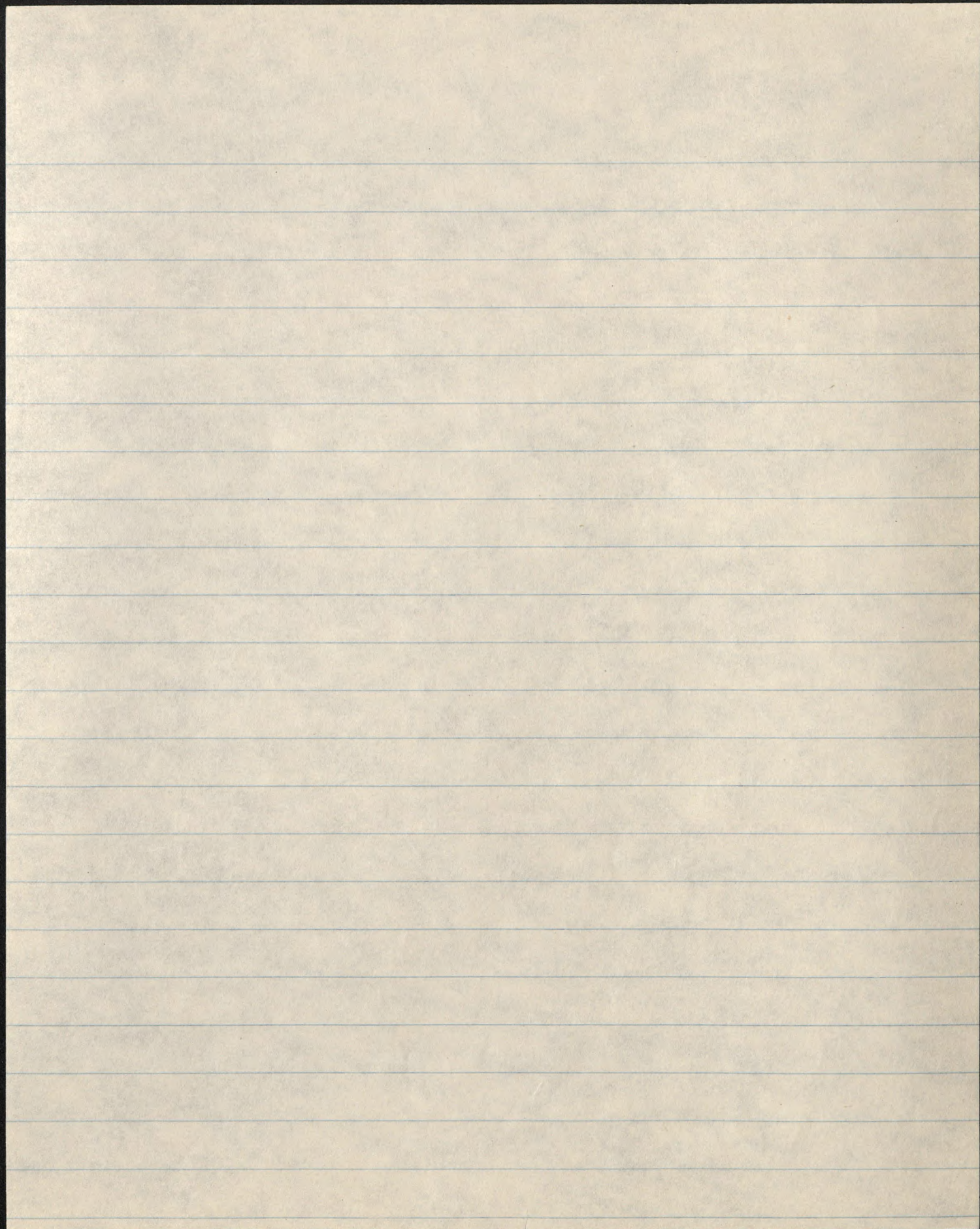


It was a nervous cowering beast which fled at our approach only to be brought back <sup>by its</sup> <sup>owner</sup> by its attentive owner. Apparently it is highly prized by the natives although I do not know what value it has other than the fact that its fur may be used for ornamentation.

At the 2150 m camp above the Idunbung River a dog was caught in a stub trap. Its whining loud was heard distinctly for more than 1/4 mile away. Unfortunately the dog escaped while a Dyak collector was trying to pin it beneath a forked stick. According to this collector it was a ♂; brown and white in color; about 16 inches high, and about 24 inches long in body. This animal was caught in a trap set on a ridge top trail through a bamboo thicket in the mossy beech forest.

Although no dogs or their signs were seen about the 1800 m and



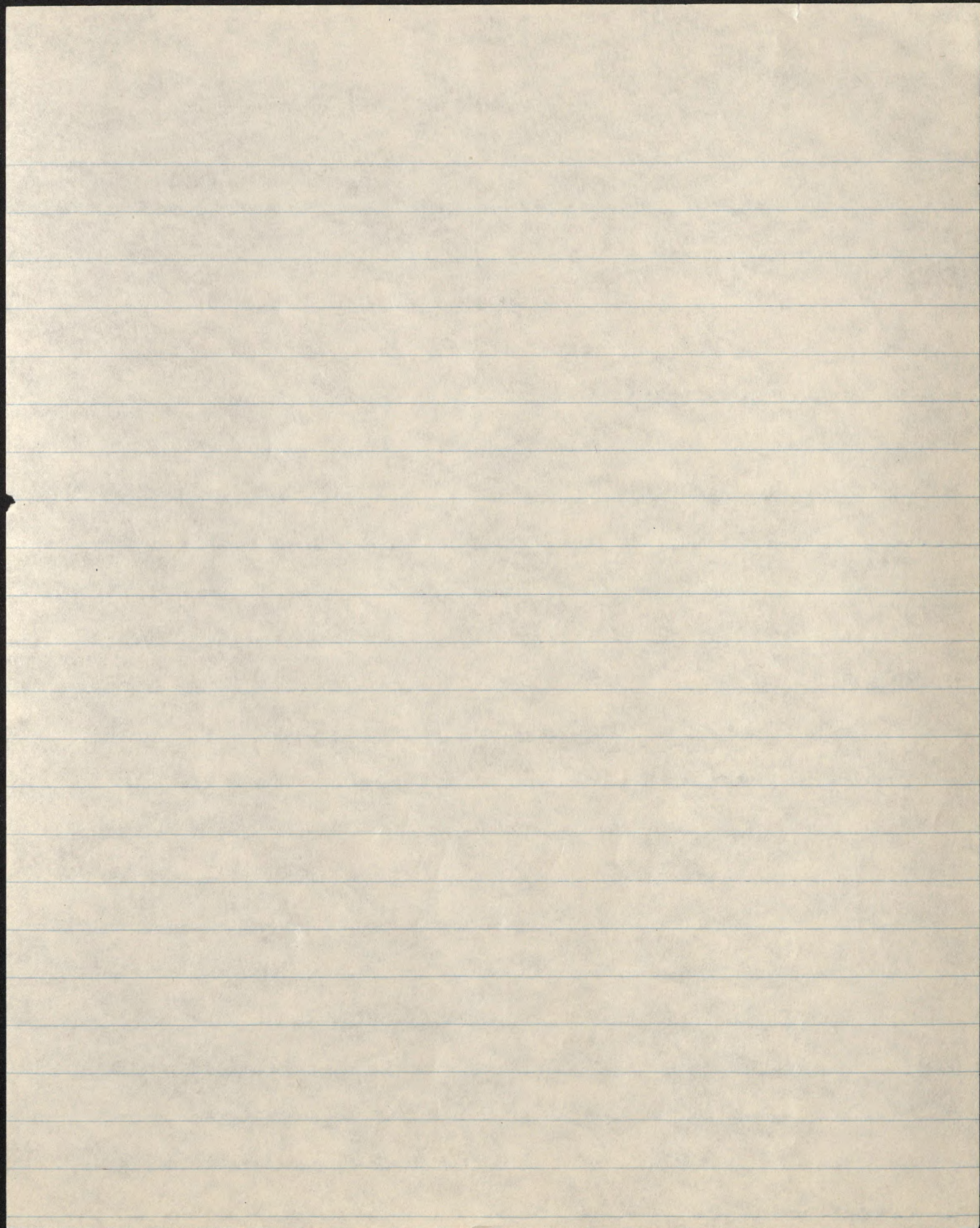




1200 m camps they probably occurred uncommonly in this region.

At the 850 m camp a number of dogs were brought in by the natives 4 of which were purchased, a knife for the small ones, an axe for the larger ones. These natives with their dogs had traveled some 5 days to our camp from their village on the Segie River (10 km SW of Burnand Camp Ikenbung River, 800 m). The animals were all much of the same color with large light brown markings against a dirty white background. While tied in camp these dogs howled almost continually and were answered by other Papuan dogs. During the evening too these native dogs which had accompanied their masters in a nearby camp howled frequently. To my knowledge they never barked although they occasionally issued a yapping howl. These dogs were very frightened when near strangers but



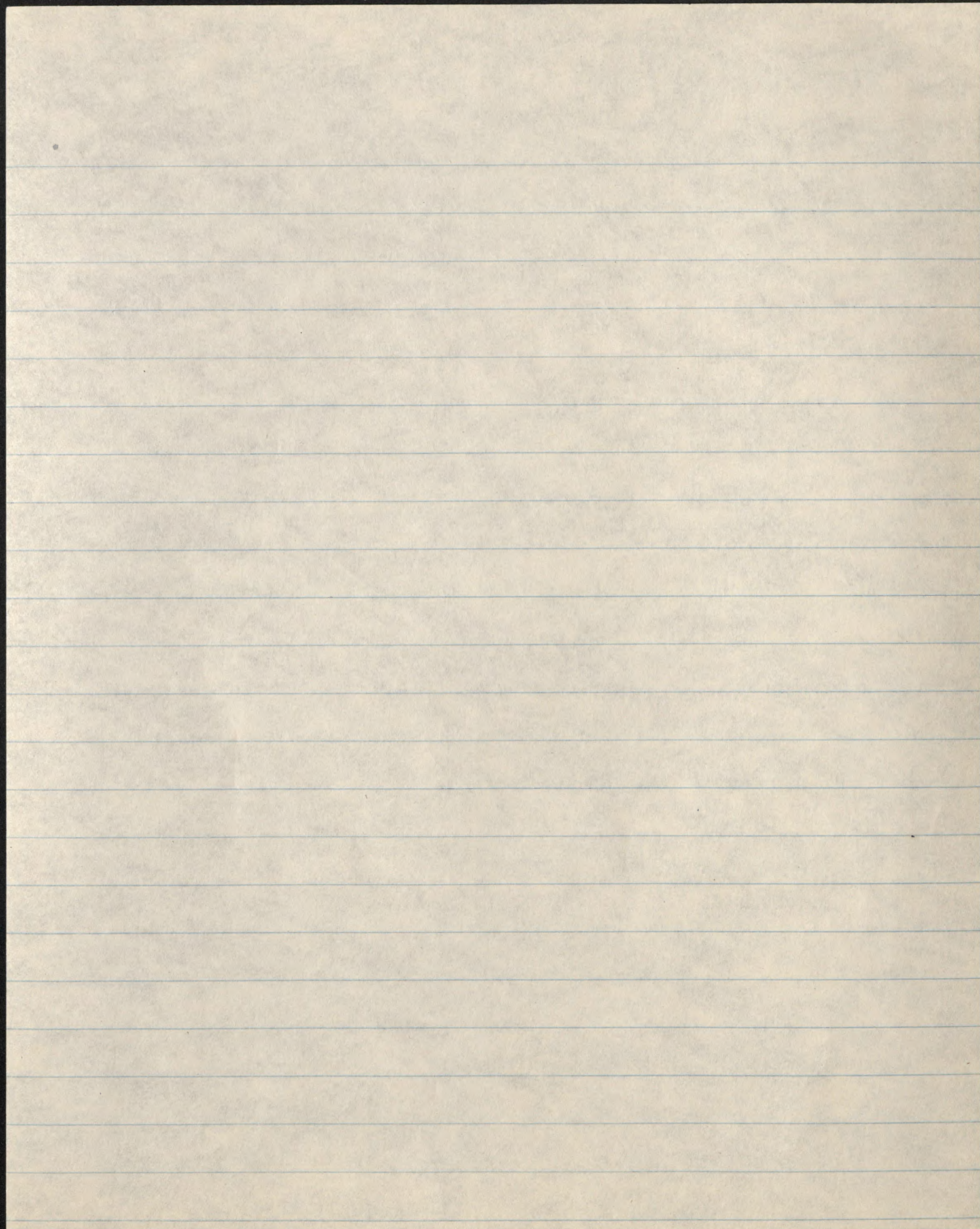




behaved like domestic dogs when in the presence of their owners. They responded to call coming to the Papuan when he voiced a throaty "ho". They are apparently well fed and cared for.

A single individual was taken near Bundad Camp. Although caught in a snare which was set on the rain forest floor I believe that the animal was a village dog. This assertion is based on the fact that the hair on the tail was partially burned and the vibrissae were singed which would indicate that the animal had come too close to the camp fire of the natives.







## Canis

Mar. 10 4 Km. SW Bernhard Camp, Plesburg R., Netherlands New Guinea 850 m.

2 brought in by natives. According to Dr. Falls who came in with the natives from the Segie River (10 Km SW Bernhard Camp, Plesburg R., Netherlands New Guinea 800 m.) there were 5 dogs accompanying them. They were all of much the same shape and size and color. The small one was purchased for 5 shells, the large one for a knife. Had a good opportunity to listen to the vocalization of these beasts. The two purchased animals howled a good deal of the time while they were tied in camp and answered by howls of the other Plesman dogs. During the evening too the natives dogs frequently howled. To my knowledge they never barked.

Mar. 11. Dogs were heard in the vicinity of camp about 4:00 and in the evening about 7:00. Boyd reported that he heard them barking but I did not hear anything but their howls.

Note. - The larger of the two dogs purchased yesterday was apparently adult but as yet the testis had not come down.

Mar. 12

2 brought in by natives. They were the same natives (with 1 exception) that brought in dogs on the 10th. These natives brought in 4 for sale 3 sub adults, and 1 old adult. Purchased 2, one subadult for a knife, one adult for an axe. The dogs although afraid of strangers and apparently willing to bite if not allowed to receive one term and react much like ordinary domesticated dogs about the natives. They respond to their calls which is a deep throaty "ho". They apparently are fairly well cared for for both were fat, and had food in their stomachs.

Apr. 19

Bernhard Camp, Plesburg R., Netherlands New Guinea 75 m.

1 in 418 spec. Brought in by collectors. Taken on upper flood plain. I believe that this animal was a Plesman dog, that is one of the village dogs. This assumption is based on



the burnt hair of the tail and the ringed  
vibrissae.



Canis familiaris. - <sup>No</sup>~~The~~ dogs were taken from the vicinity of Lake Habbema or above, although dung and tracks of them were commonly seen up as high as 4000 m. on the ridges along the muddy footpaths. While camped there I did not hear them vocalize, but Mr. L.J. Brass reports having heard them howl on several different occasions, once from a limestone bluff above the 3600 m. camp. Examination of a number of \_\_\_\_\_ would indicate that these animals fed principally upon Mallomys and Stenomys (2 sp.), which were found commonly at these higher altitudes. Fruit, berries, and insects seemed to make up the remainder of their diet. On two different occasions dogs were caught in steel traps, but in each instance the animal managed to pull loose.

At the 2800 m. and 2200 m. camps no dogs were seen or heard. It is probable that they occasionally come into the mossy forest country, although there was no evidence of it. The natives of the region did not have domestic dogs.

One individual, the only one seen in the Grand Valley, was purchased from the natives near the Balim River camp. This half wild animal belonged to a native who told us that he had dug it out from the hillside when it was small. After much bargaining it was pur-



Canine families - The dogs were taken from the vicinity of

the house at above, although the animals of them were common-

ly seen at the highest part of the river about the middle of the

while I was there I did not hear the barking, but Mr. J. B. says

reports having heard the howl on several different occasions, once

from a distance about 3000 ft. and a number of a number

of would indicate that these animals are principally of the

Canine families (Canidae), which were found commonly at these

places. The animals were seen in the morning and in the

afternoon of their visit. On two different occasions, when I was

in the party, but in each instance the animals managed to get loose.

At the 3000 ft. and 4000 ft. camps no dogs were observed to be

in the vicinity and they occasionally come into the camp, except on

occasions when they were in evidence of it. The behavior of the

dogs was domestic.

One individual, the only one seen in the Grand Valley, was pur-

chased from the natives near one of the river camps. This man with

himself belonged to a native who said he had got it out from

the natives when he was small. After much examining it was



chased for the sum of 3.0 cowrie shells, the highest price paid for any article obtained from the natives. The beast was small, about 300 mm. high at the shoulders, 800 mm. total length, and 350 mm. tail length. These figures are estimations rather than actual measurements. The color was that of black and white in broad marks, the latter color predominating on the anterior half. The tail was held in a slight upward curve, not looped. The ears were erect and pointed. The hair was moderately short and with a generally slick, shiny appearance.

It was a nervous, cowering beast which fled at our approach, only to be brought back biting and kicking, by its attentive owner. Apparently it is highly prized by the natives, although I do not know what value it has other than the fact that its fur may be used for ornamentation.

At the 2150 m. camp above the Idenburg River a dog was caught in a steel trap. The whining howl was heard distinctly for more than  $\frac{1}{4}$  of a mile away. Unfortunately the dog escaped while a Dyak collector was trying to pin it beneath a forked stick. According to this collector it was a ♀; brown and white in color; about 16 inches high, and about 24 inches long in body. This animal was caught in a trap



showed the same of U.S. white shells, the highest white part was

white colored from the bottom. The bottom was small, about 500 m.

high at the bottom, and the top was 100 m. high, and the bottom

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was 100 m. high. The bottom was 100 m. high, and the bottom



set on a ridge top trail through a bamboo thicket in the mossy beech forest.

Although no dogs or their signs were seen about the 1800 m. and 1200 m. camps, they probably occurred uncommonly in this region.

At the 850 m. camp a number of dogs were brought in by the natives, 4 of which were purchased, a knife for the small ones, an axe for the larger ones. These natives with their dogs had traveled some 5 days to our camp from their village on the River (10 km. S.W. of Bernhard Camp, Idenburg River, 800 m.). The animals were all much of the same color with long light brown markings against a dirty white background. While tied in camp these dogs howled almost continually, and were answered by other Papuan dogs. During the evening, too, these native dogs, which had accompanied their masters in a nearby camp, howled frequently. To my knowledge they never barked, although they occasionally loosed a yapping howl. These dogs were very frightened when near strangers but behaved like domestic dogs when in the presence of their owners. They responded to call, coming to the Papuan when he voiced a throaty "ho". They are apparently well fed and cared for.

A single individual was taken near Bernhard Camp. Although caught in a snare which was set on the rain forest floor, I believe that the



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animal was a village dog. This assertion is based on the fact that the hair on the tail was partially burned and the vibrissae were singed, which would indicate that the animal had come too close to the camp fire of the native.



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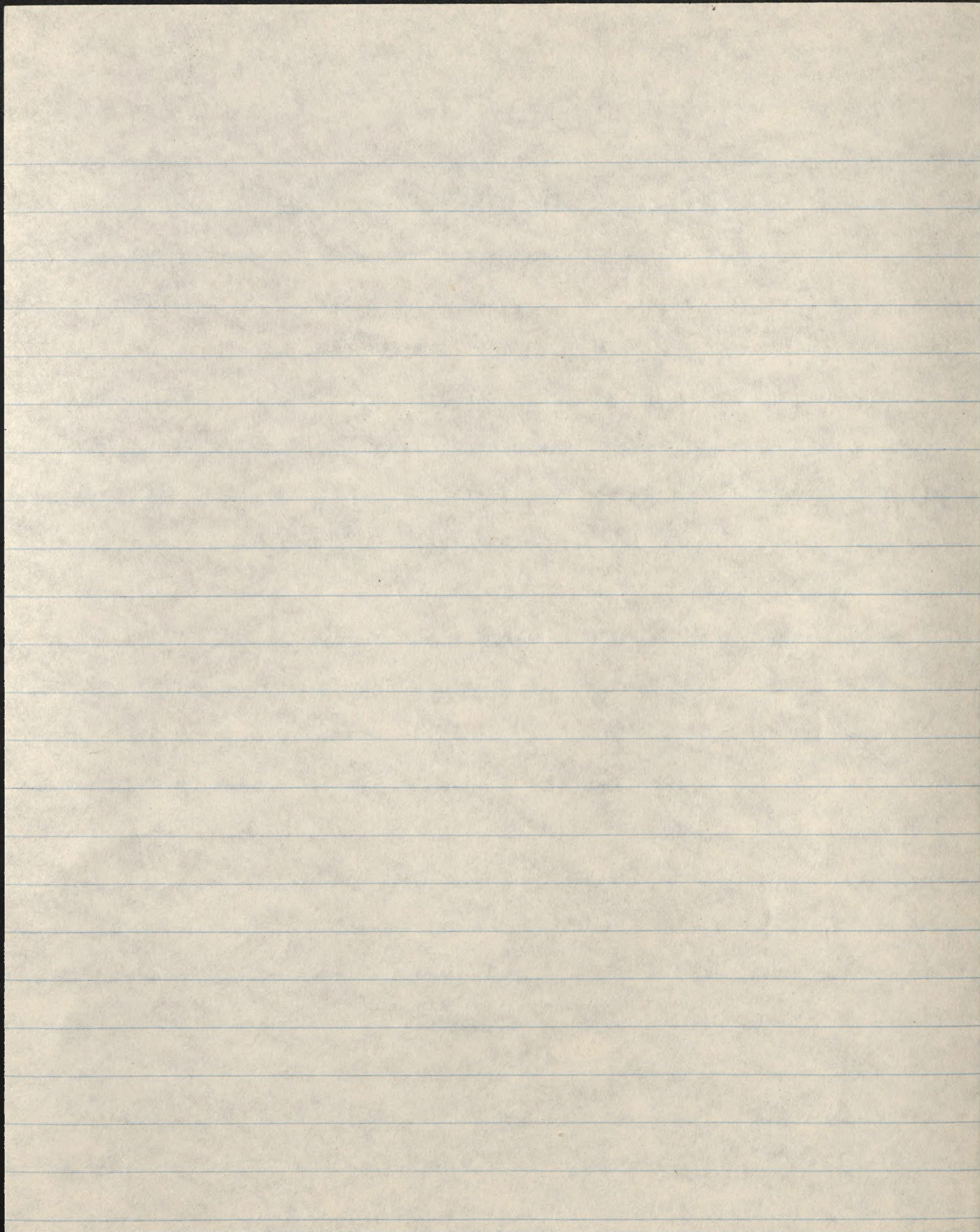


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Dactylopsax palpata — Two individuals were purchased from natives who brought them into the 2800 or camp. One of these was apparently shot by the natives in the immediate vicinity of camp for it was still warm and bleeding from the arrow wound when brought in. Things of interest about the beast are the heavy build of the body; the long protruding 4th finger with a small claw; the heavy limb, particularly the hind limbs, with its gressable thumb; the abrupt ventral hook on the top of the tail; the long retractable lower lip; the long tongue; and the sweet musky odor.

At the Belé River camp 6 individuals were brought in by natives. One of these was a ♀ with a long pouch similar to that of the Phalanger and another a young of this ♀. This young though rather large was still dependant upon the ♀ for its existence getting its nourishment from







the single functional mammary gland.

The measurements of this young are as follows:

Total length 210

Tail vent. 93

Hind foot SV 26

Ear from crown 12

One specimen from the 850 m camp was caught <sup>in a corner at</sup> <sup>top of</sup> a log in the mossy forest.

Another specimen was taken by an collector 10 Km SW Bumband Coy at 1500 m.

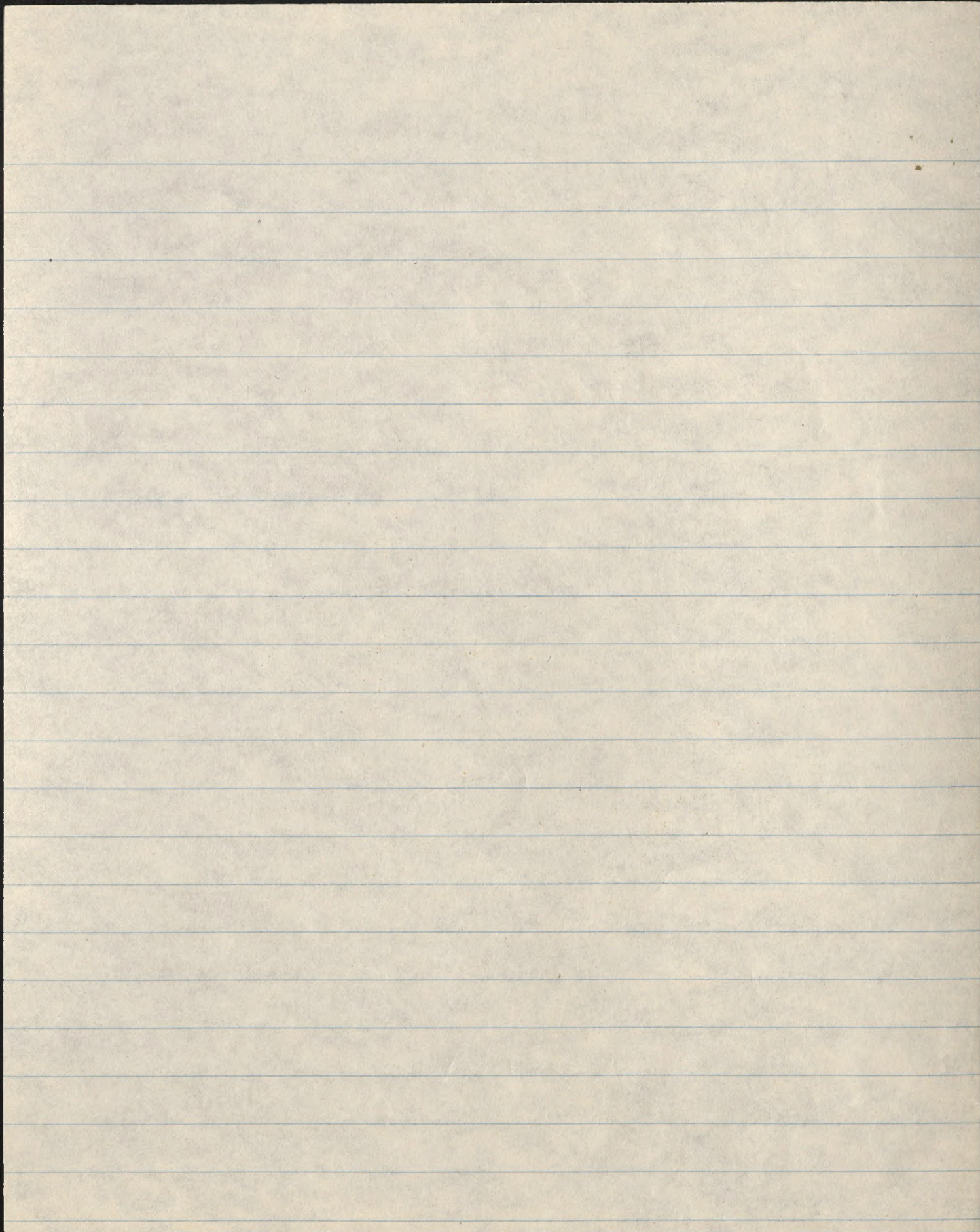
I have no record of the exact habitat except that the general character of the country was mossy forest.

This animal probably occurred at the 2100 m, 1800 m, and 1200 m camps although no specimens were obtained to substantiate

this assumption. However there were occasional logs on rotting trees <sup>seen</sup> that were broken into by prying - ~~breaking~~ breaking off chunks for the decaying wood which appeared to be the work of this animal.

A penis of an adult ♂ is

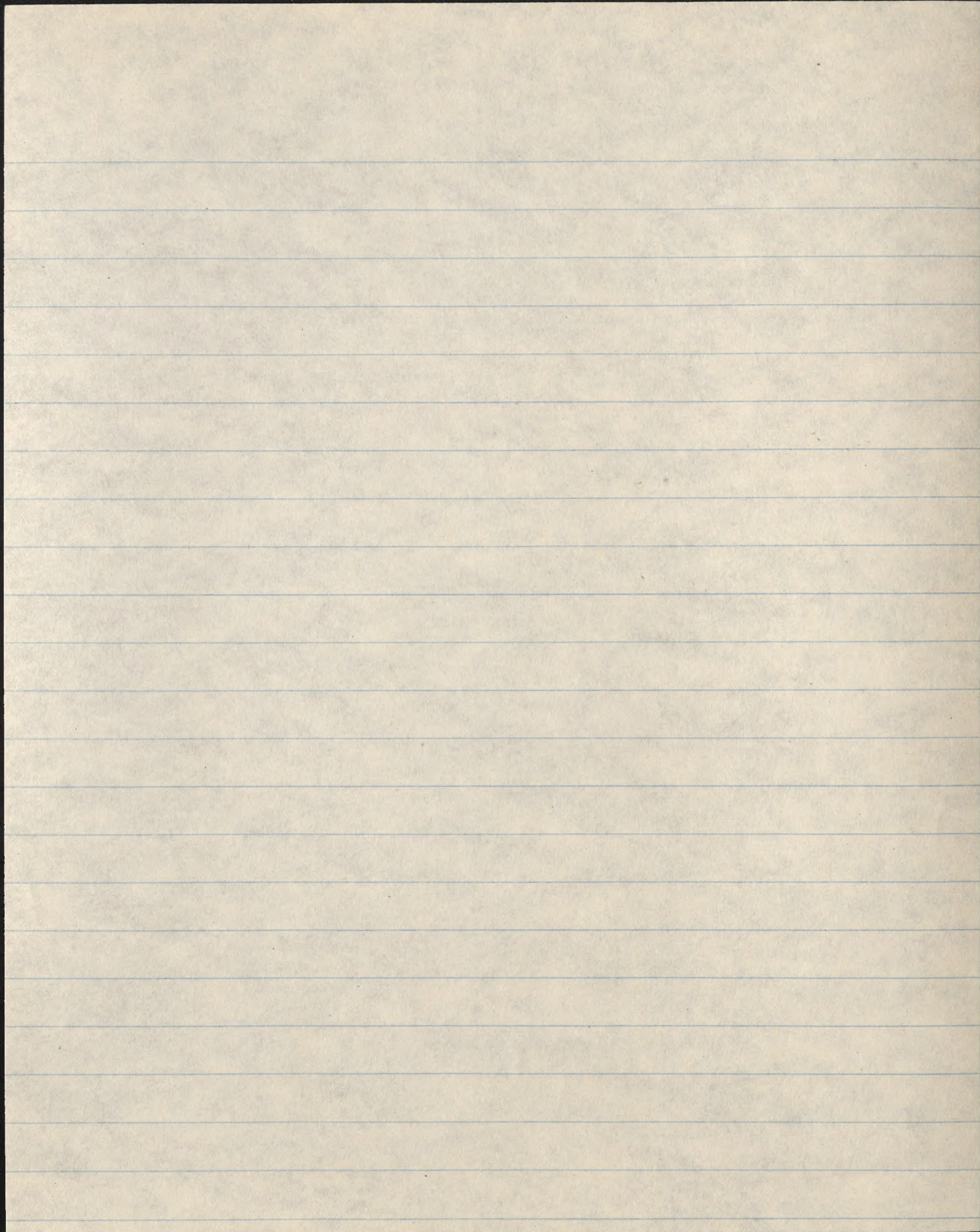






bifid dorsally for about  $\frac{1}{4}$  its  
length. See fig. no —







Dactylonax palpator. - Two individuals were purchased from natives who brought them into the 2800 m. camp. One of these was apparently shot by the natives in the immediate vicinity of the camp, for it was still warm and bleeding from the arrow wound when brought in. Things of interest about this beast are the long heavy body; the long protruding 4th finger with a small claw; the heavy limbs, particularly the hind limbs with the possible thumb; the abrupt ventral hook on the tip of the tail; the long retractable lower lip; the long tongue; and the sweet musky odor.

At the Bele River Camp 6 individuals were brought in by natives. One of these was a ♀ with a long pouch similar to that of the Phalangers and another a young of this female. This young, though rather large, was still dependant upon the ♀ for existence, getting its nourishment by the single functional mammary gland.

The measurements of this young were as follows:

Total length 210

Tail vert. 93

Hind foot 26

Ear from crown 12

One specimen from the 850 m. camp was caught in a snare set on top of a log in the mossy forest.







of a log in the mossy forest.

Another specimen was taken by a collector at 10 km. S.W. Bernhard Camp at 1500 m. I have no record of the exact habitat except that the general character of the country was mossy forest.

This animal probably occurred at the 2150 m., 1800 m. and 1200 m. camps, although no specimens were obtained to substantiate this assumption. However, there were occasional logs on rotting trees seen that were broken into by prying off chunks from the decaying wood which appeared to be the work of this animal.

A penis of an adult ♂ is bi dorsoventrally for about  $\frac{1}{4}$  of its length. See fig. No. .







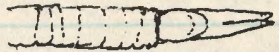
Wm B. Richardson  
1938  
1939

## Dactylopsax

- Oct 31 9 km NE Lake Habbema, Netherlands New Guinea 2800 m  
1 brought in by natives probably from below.  
Theraps of interest about the head is the heavy build,  
the long protruding snout with small jaws; the  
heavy limbs particularly the hind limbs, the broad  
ventral curve at the top of the tail; the long retractable lower  
lip; long tongue.
- Nov 5 9 km NE Lake Habbema, Netherlands New Guinea 2800 m.  
1 brought in by natives. It was apparently  
taken in the immediate vicinity for it was  
still warm and bleeding from the arrow  
wound when I purchased it.
- Nov 6 Bela River, 18 km NE Lake Habbema, Netherlands New Guinea 2200 m.  
1 brought in by natives. It is the first  
female. I was surprised to find that the genital was  
very poorly developed, not prominent, but much the same  
as the male.
- Nov 12 Bela R., 18 km NE Lake Habbema, Netherlands New Guinea 2200 m.  
1 brought in by natives.
- Nov 14 Bela R., 18 km NE Lake Habbema, Netherlands New Guinea 2200 m  
2 brought in by natives, what appears to  
be a ♀ with its young. They were purchased from  
the same natives at the same time. The ♀ had  
only 1 functional mammary gland and a large  
pouch.
- Nov 23 Bela R., 18 km NE Lake Habbema, Netherlands New Guinea 2200 m.  
1 brought in by natives.
- Dec 2 Bela R., 18 km NE Lake Habbema, Netherlands New Guinea 2200 m.  
1 brought in by natives.
- Apr 3 4 km SW Burnard Camp Humberg R., Netherlands New Guinea 850 m.  
1 in 987 snare. Brought in by collector.  
According to him it was taken in snare



set on top of fallen log. Penis  
is bifid also ventrally for about  $\frac{1}{4}$  its  
length.



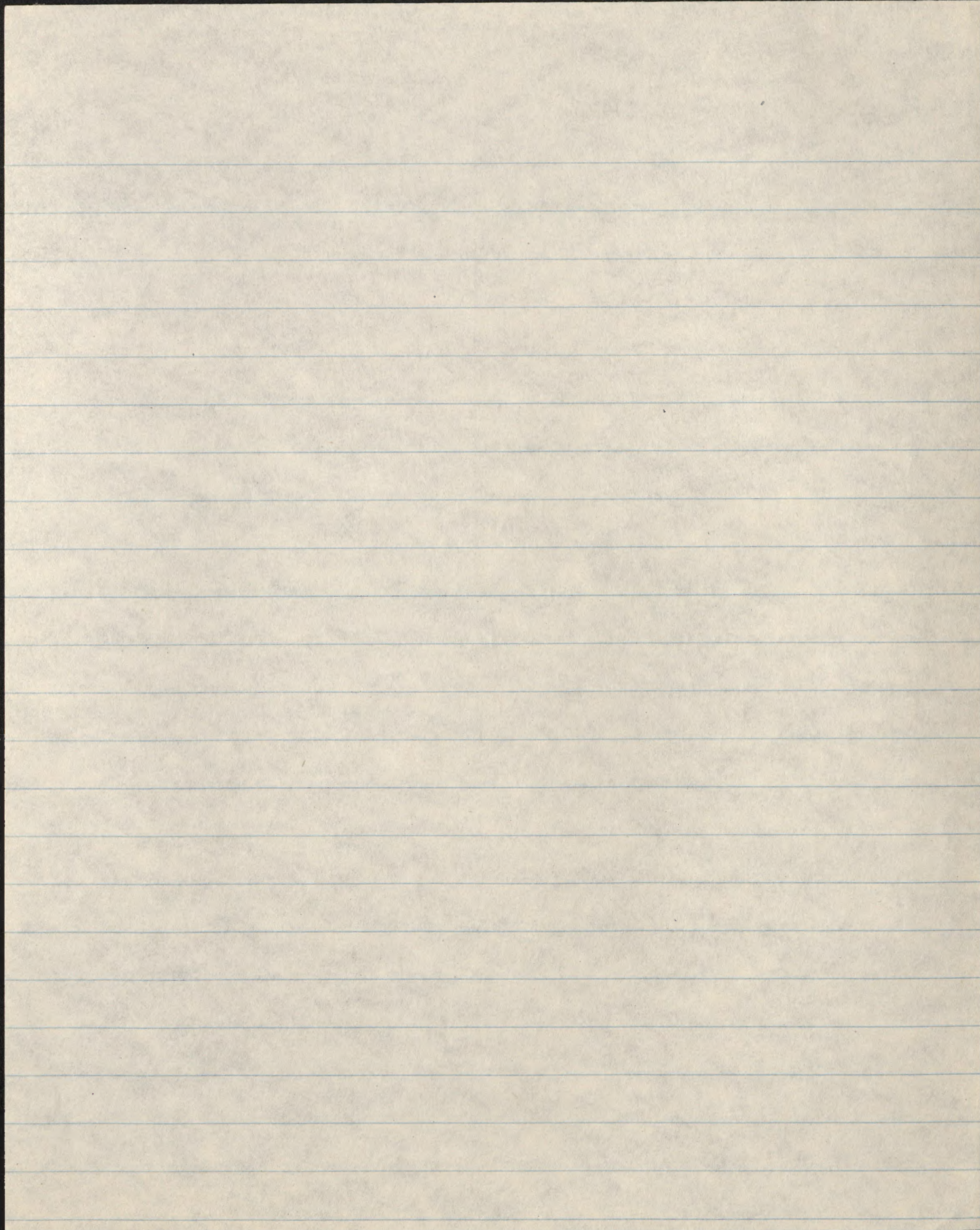


1

Dasyurus albopunctatus - One individual was taken near Habbema Lake camp. The trap was set in a trail which had probably been made by Stenomys but used by Dasyurus when prying upon them. The moss covered ground was broken by numerous mossy clumps which had formed about the bases of scattered bushy rododendrons. Such clumps are to be found in the border area where there is a transition from the grasslands to the heavy mossy forest. In this transition area there are scattered Labocedra trees as well as clumps of rododendrons and other shrubs.

Another specimen was taken at the 3600 m camp. It too was caught in a trap set in a Stenomys runway at the edge of the sub alpine forest which bordered a grassy valley near a limestone cliff. The pouch consisted of small lateral folds of the skin incompletely covering the 4 mammary glands with moderately







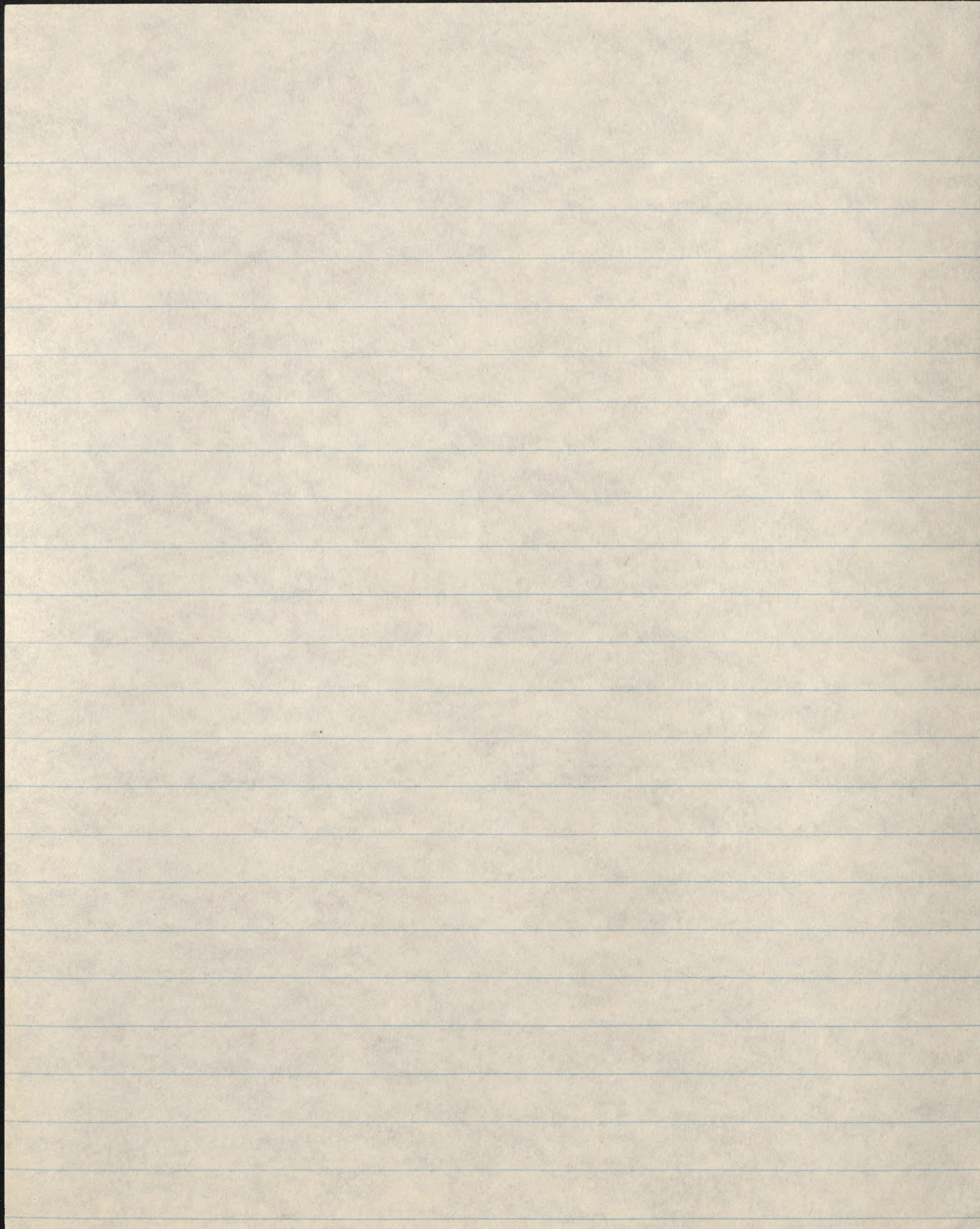
well developed, non lactating tits.

Two immature animals were taken at the 2800 m camp. One was shot while running over the littered floor of the mossy beech forest. The other was caught in a trap set on a log which formed a bridge across a small stream in the mossy forest.

Seven individuals were taken at the Belle River camp. Five were brought in by natives and 2 were trapped. One of those trapped was taken in a runway over a mossy buttress of a large Sama tree. This region was that of large trees, thin undergrowth, and litter. The other animal trapped was taken in a runway at the edge of an old log in a very thick growth of brush and bracken. This area was an abandoned garden at the edge of the forest, which had reverted to a second growth forest.

One ♀ with 3 young were taken at the 1800 m camp. The habitat was the

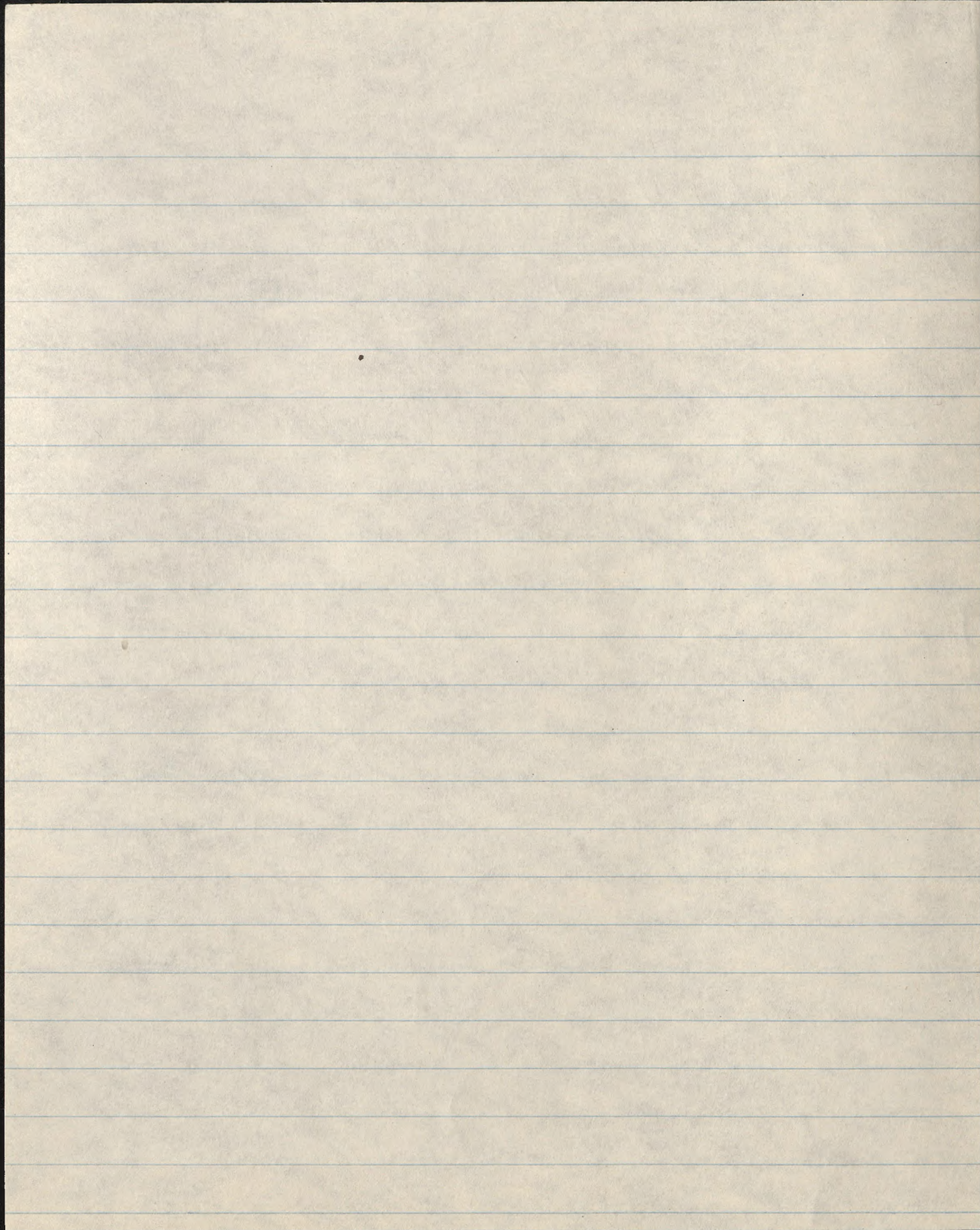






mossy forest with scattered large trees, rather  
 thick second story growth, scattered clumps  
 of undergrowth, and much lichen heavily  
 draped with moss. It was in a trail  
 over the mossy forest floor that the trap  
 which caught the animal was set. The three  
 young were each firmly attached to a mammary  
 gland. The 4th ~~the~~ mammary was nonfunctional  
 and much reduced in size. These squirming  
 young remained alive and active for 4 to  
 4 1/2 hours after the ♀ had been killed.  
 One was pulled away from the tit by  
 exerting a force of 4 or 5 lbs., the others  
 were cut loose by snipping the mammary.  
 The one which had been pulled free  
 frequently uttered a hissing squeak similar  
 to that uttered by young Platycogeles. This  
 squeak which could be heard by the  
 human ear for a distance of several  
 yards may have a survival value in  
 that it would aid the ♀ in finding a  
 dislodged young. The other young with



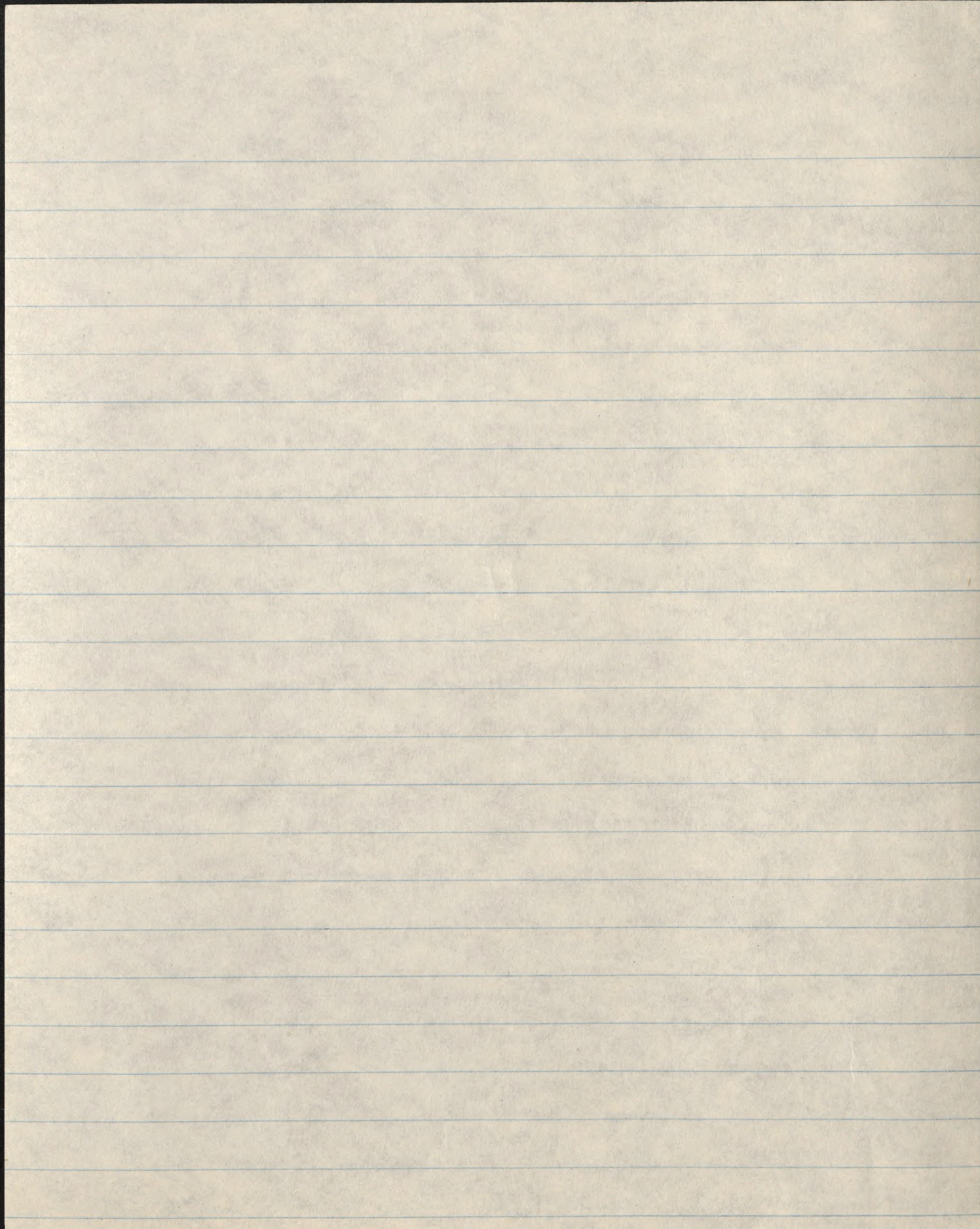




the lot plug still in the mouth were  
 apparently unable to squeak. These young  
 are probably more easily detached than many  
 young merengivales for there is no well  
 formed pouch as is found in the Phalangera,  
Dorcopsis, or Echymipera. This pouch,  
 if it can be called such consists of a  
~~small~~ lateral ~~and~~ anterior fold which  
 forms an inverted U shaped flap about  
 the anterior 3/4 of the pouch area. These  
 folds anteriorly are 8 mm in depth and  
 decrease posteriorly until they disappear  
 at a point about 1/4 the distance from  
 the posterior end of the pouch area. This  
 inverted U shaped pouch with a larger anterior  
 fold and no poster one would indicate that  
 this animal has a tendency toward a  
 pouch with a posterior opening such as  
 is found in Peroryctes and Echymipera.

Five individuals were taken at  
 the 1200 m camp. Three of these are  
 juveniles probably of the same litter.



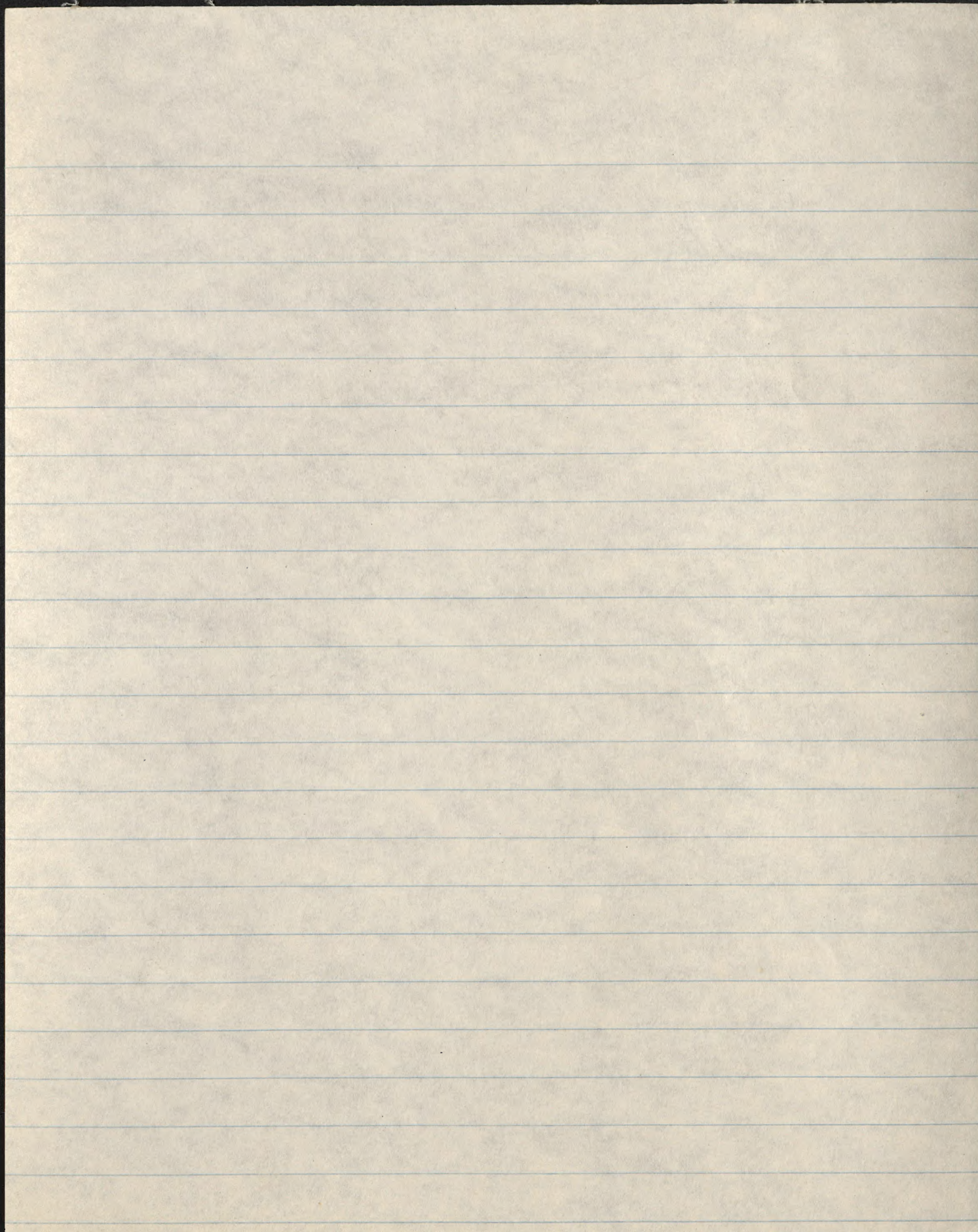




The stomach of one contained the remains of large insect grubs another the remains of insects, and the third was empty. One of these a juvenile ♀ had very small mammae concealed in the peculiar hair of the small pouch area. An adult ♀ was taken in a trap set in a small runway on a moss covered rocky hill slope with scattered undergrowth and litter in the rather open mossy forest. This ♀ had been <sup>partially</sup> eaten while in the trap apparently by another of its own kind and probably by one or more of the three above mentioned young which were later caught in the same trap. These young were probably in last litter. An adult ♂ was also taken. Habitat was the mossy forest with rather heavy moss covered litter. His stomach was empty. His penis was bifid.

Five Desmynnus were caught at the 850 m camp. A ♀ with 3 attached young were taken in a trap set in a runway in heavy undergrowth







on the bank of a river which ran through the  
mossy forest. The pouch of the ♀ was similar  
in most respects to the ♀s previously described  
from the 1800 m camp. The following are

a list of measurements of the pouch area  
taken from the freshly killed ~~specimen~~ animal.

Size of pouch area 40 x 40 mm

Posterior lip of pouch area to vagina 20 mm

Posterior lip of pouch area to posterior mammae row 13 mm

Distance between anterior mammae 25 mm

Distance between posterior mammae 15 mm

Distance between anterior and posterior mammae 10 mm

Height of anterior wall of pouch 25 mm

Height of lateral walls of pouch 20 mm

No posterior wall to pouch.

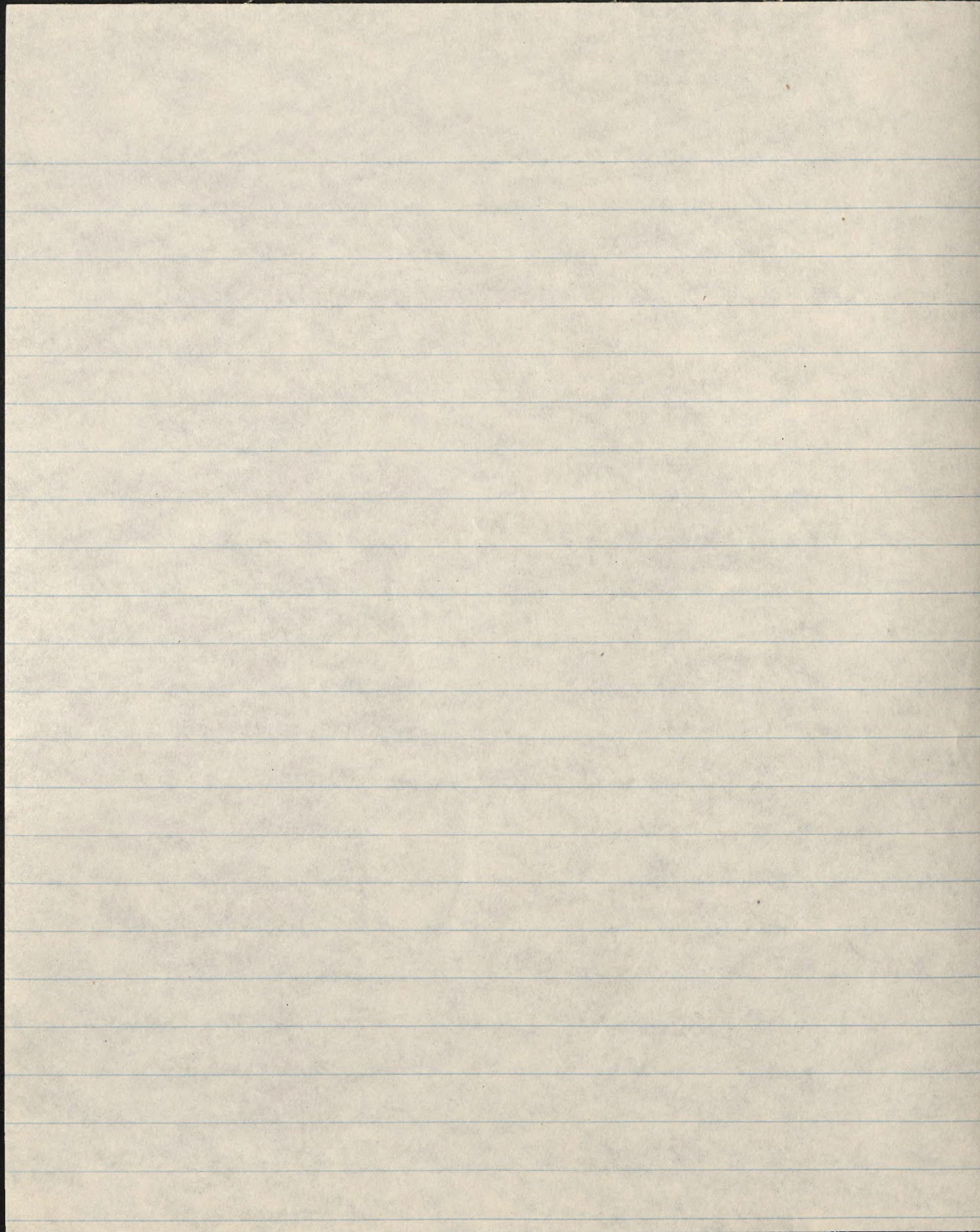
Another adult ♀ was taken at this camp  
which did not carry young. Comparable  
measurements of the pouch area which were  
made in the field are as follows.

Size of pouch area 15 x 15 mm

Posterior lip of pouch area to vagina 28 mm

Posterior lip of pouch area to posterior mammae row 5 mm







Distance between anterior mammae 10 mm

Distance between posterior mammae 4 mm

Distance between anterior and posterior mammae 7 mm

Height of anterior wall of pouch 0

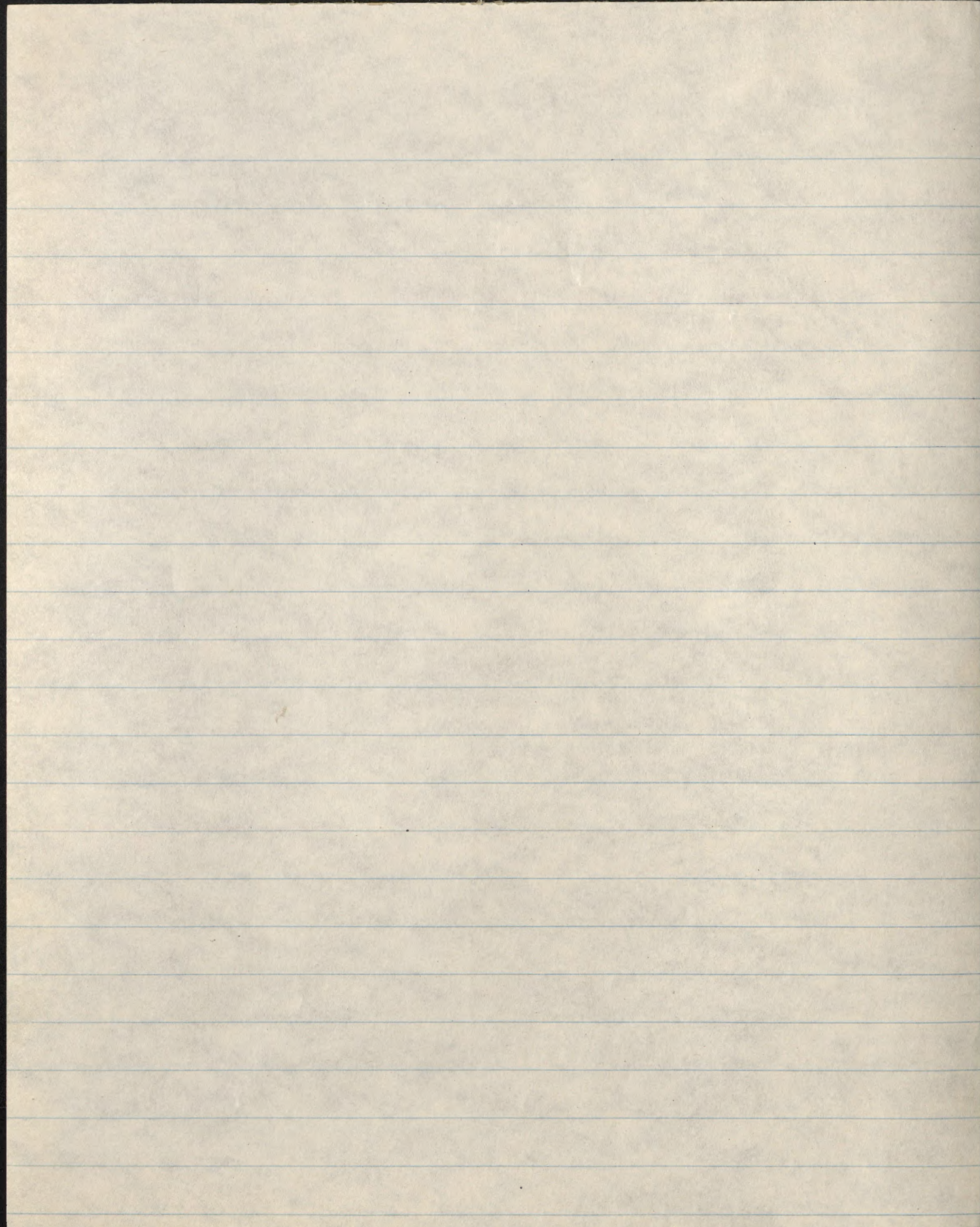
Height of lateral wall of pouch 2 mm

This animal possessed the unusual number of 3 pair of tits, small, non lactating, and concealed by a rather dense stiff hair of the pouch. It appears as though the pouch area had contracted thus marring the hair in that region. Her stomach contained insect remains.

A very large ♂ was snored at the 850 m camp. It was taken on a ridge top in an open mossy forest. His stomach contained the remains of what appeared to be a young Calynoptera.

Four young were taken at Bernard Camp. They were all caught in the same vicinity and are probably of the same litter. Habitat was a small protected runway beneath a log on the open



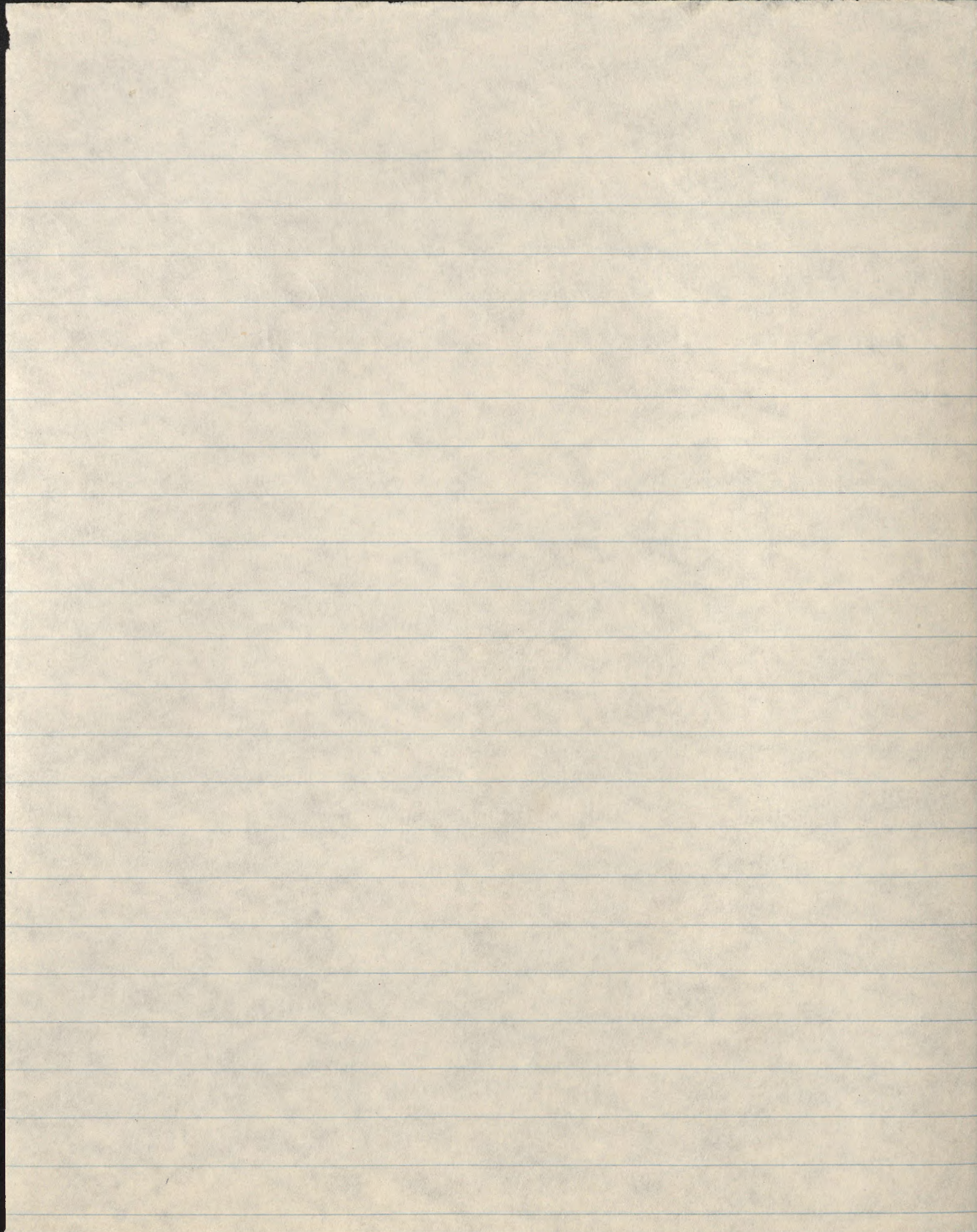




forest floor of the lowland rain forest.

Another specimen was brought in by a collector from the Cyclops (Cyclops Mountains probably near Dojo, 150 m)







Dasyurus albopunctatus. - One individual was taken near Habbema Lake Camp. The trap was set in a trail which had probably been made by Stenomys but used by Dasyurus when preying upon them. The moss covered ground was broken by numerous mossy clumps which had formed about the bases of scattered bushy rhododendrons. Such clumps are to be found in the broader areas where there is a transition from the grasslands to the heavy mossy forest. In this transition area there are scattered Libocedrus trees as well as clumps of rhododendrons and other shrubs.

Another specimen was taken at the 3600 m. camp. It, too, was caught in a trap set in a Stenomys runway at the edge of the sub-alpine forest which bordered a grassy valley near a limestone cliff. Her pouch consisted of small lateral folds of the skin incompletely covering the 4 mammary glands with moderately well developed, non-lactating tits.

Two immature animals were taken at the 2800 m. camp. One was shot while running over the littered floor of the mossy beech forest. The other was caught in a trap set on a log which formed a bridge across a small stream in the mossy forest.

Seven individuals were taken at the Bele River Camp. Five were



Scientific Localities - The individual specimens were numbered

and listed. The type was set in a jar with two drops of cedar oil

to preserve the color of the type. The jar was sealed with

paraffin. The jar was placed in a box with other specimens

of the same species. The box was sealed with paraffin

and labeled with the name of the species and the number of

specimens. In this collection were also the specimens

of the same species as well as a number of other specimens

of the same species. The jar was sealed with paraffin

and labeled with the name of the species and the number of

specimens. In this collection were also the specimens

of the same species as well as a number of other specimens

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of the same species as well as a number of other specimens

of the same species. The jar was sealed with paraffin

and labeled with the name of the species and the number of

specimens. In this collection were also the specimens



brought in by natives and two were trapped. One of those trapped was taken in a runway over a mossy buttress of a large Sama tree. This region was that of large trees, thin undergrowth, and litter. The other animal trapped was taken in a runway at the edge of an old log in a very thick growth of brush and bracken. This area was an abandoned garden at the edge of the forest, which had reverted to a second growth forest.

One ♀ with 3 young was taken at the 1800 m. camp. The habitat was the mossy forest with scattered large trees, rather thick <sup>story</sup> second/growth, scattered clumps of undergrowth, and much litter heavily draped with moss. It was in a trail over the mossy forest floor that the trap which caught this animal was set. The three young were each firmly attached to a mammae. The fourth mammae was nonfunctional and much reduced in size. These squirming young remained alive and active for 4 to 4½ hours after the ♀ had been killed. One was pulled away from the tit by exerting a force of 4 to 5 lbs., the others were cut loose by snipping the mammae. The one which had been pulled loose frequently uttered a hissing squeak similar to that uttered by young Phascogeles. This squeak, which could be heard by the human ear for a distance of several yards, may have a



found in a... and they were... This...

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survival value in that it would aid the ♀ in finding a dislodged young. The other young with the tit plug still in the mouth were apparently unable to squeak. These young are probably more easily detached than many young marsupials, for there is no well formed pouch, as is found in the Phalangus, Dorcopsis, or Echymipera. This pouch, if it can be called such, consists of a lateral anterior fold which forms an inverted U shaped flap about the anterior  $\frac{3}{4}$  of the pouch area. These folds anteriorly are 8 mm. in depth and decrease posteriorly until they disappear at a point about  $\frac{1}{4}$  the distance from the posterior end of the pouch area. This inverted U shaped pouch with a larger anterior fold and no posterior one would indicate that this animal has a tendency toward a pouch with a posterior opening such as is found in Peroryctis and Echymipera.

Five individuals were taken at the 1200 m. camp. Three of these were juveniles, probably of the same litter. The stomach of one contained the remains of large insect grubs, another the remains of insects, and the third was empty. One of these, a juvenile ♀, had very small mammae concealed in the peculiar hair of the small pouch area. An adult ♀ was taken in a trap set in a small runway on a moss covered rocky hill slope with scattered undergrowth and litter in the rather open mossy forest. This ♀ had been partially eaten while in the trap, apparently by another







of its own kind and probably by one or more of the above mentioned young which were later caught in the same trap. These young were probably the same litter. An adult ♂ was also taken. Habitat was the mossy forest with rather heavy moss covered litter. His stomach was empty. Its penis was bi

Five Dasyurus were caught at the 850 m. camp. A ♀ with 3 attached young was taken in a trap in a runway in heavy undergrowth on the bank of a river which ran through the mossy forest. The pouch of the ♀ was similar in most respects to that of the ♀ previously described from the 1800 m. camp. The following is a list of measurements of the pouch area taken from the freshly killed animal:

Size pouch area 40 X 40 mm.

Posterior lip of pouch area to vagina 20 mm.

Posterior lip of pouch area to posterior mammae row 13 mm.

Distance between anterior mammae 25 mm.

Distance between posterior mammae 15 mm.

Distance between anterior and posterior mammae ~~20~~ 10 mm.

Height of anterior wall of pouch 25 mm.

Height of lateral walls of pouch 20 mm.

No posterior wall to pouch.



of the same kind and probably of the same origin.

Young animals were taken together in the same traps. These young were brought

to the same place. An attempt was also made to identify the progeny

of the same animal. The results were as follows. The specimens were found

at the same place.

river banks with a length of the body of 10 mm.

Young were taken in a trap in a family of the same kind. The length

of a river bank in the same trap was 10 mm. The young of the same

kind in most respects to that of the previously described form.

of the same kind. The total length of the body of the young

was 10 mm. The young were taken in the same trap.

of the same kind. The length of the body of the young

was 10 mm. The young were taken in the same trap.

of the same kind. The length of the body of the young

was 10 mm. The young were taken in the same trap.

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was 10 mm. The young were taken in the same trap.

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was 10 mm. The young were taken in the same trap.

of the same kind. The length of the body of the young



Another adult ♀ was taken at this camp which did not carry young.

Comparable measurements of the pouch area which were made in the field are as follows:

Size of pouch area 15 x 15 mm.

Posterior lip of pouch area to vagina 28 mm.

Posterior lip of pouch area to posterior mammae row 5 mm.

Distance between anterior mammae 10 mm.

Distance between posterior mammae 4 mm.

Distance between anterior and posterior mammae 7 mm.

Height of anterior wall of pouch 0

Height of lateral walls of pouch 2 mm.

This animal possessed the unusual number of 3 pair of tits, small, none lactating, and concealed by rather dense stiff hair of the pouch. It appears as though the pouch area had contracted, thus massing the hair in that region. Her stomach contained insect remains.

A very large ♂ was snared at the 850 m. camp. It was taken on a ridge top in an open mossy forest/ His stomach contained the remains of what appeared to be a young Echymipera.

Four young were taken at Bernhard Camp. They were all caught in the same vicinity and were probably of the same litter. Habitat was



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a small protected runway beneath a log on the open forest floor of the lowland rain forest.

Another specimen was brought in by a collector from the Cyclops (Cyclops Mountains probably near Dojo, 150 m.).



Small pyroclastic cones, mostly less than 100 m high, are scattered over the

entire area.

Another specimen was dredged in the collector from the hydrozoan

(C. clausi) during the hydrozoan collection, 1954.



## Dasyurus

Aug 17 Lake Habbema, Netherlands New Guinea 3225m.

1 in 375 traps. This individual was taken in a trap set about 1 kilometer north of camp on the east slope of the ridge at the head of the grassy valley. The trap was set in a trail between the moss clumps which are changed about the bases of low rhododendron shrubs in that region. Here there were scattered *Leucodermis* and some 10 ft away was a heavy bush, thick with a mossy undergrowth. The most characteristic thing about the immediate vicinity was the open low <sup>small</sup> brushy patches with moss clumps about the base and a mossy inter ground cover.

Sept 11 2 km N.E. Wilhelmsdorp, Netherlands New Guinea 3560m  
~~3225m.~~

1 in 151 rat traps. Brought in by collector who said it was taken in trap set at in small runway through grass at the outer edge of the sub-alpine forest. The 4 tits were all equally well developed (tooth). The animal is nothing more than <sup>small</sup> ~~thin~~ skeletal pile of skin, inconspicuously covering the mammary glands.

Sept 15. I saw the traps in which the above animal was taken. It was set in a small runway along the outer edge of the sub-alpine forest near the base of the limestone cliff at the south end of the valley.

Oct 29 9 km N.E. Lake Habbema, Netherlands New Guinea 2800m.

2: 1 shot by collector other in 29 steel traps. The one shot was taken yesterday afternoon by Dyck who said that it was running over the forest floor. It was taken at the south on the hill slope. The one trapped was brought in by collector who said trap was set on top of <sup>small</sup> log over stream. Neither of the two showed signs of having young (immature animals)



Nov 14 Bele R., 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
1 <sup>Juv.</sup> brought in by natives

Nov 18 Bele R., 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
1 <sup>ad.</sup> brought in by natives

Nov 23 Bele R., 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
1 <sup>ad.</sup> in 206 net traps. The trap was set at the base of a large screw tree in a runway over the moss bushes. The region was that of large trees, thin undergrowth, and litter.

Nov 25 Bele R., 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
1 <sup>Juv.</sup> in 206 net traps. Taken in trap <sup>in a runway</sup> at the edge of an old log thicket & a very thick growth of brush and bracken. The area is that of a abandoned garden clearing, bordering the forest, which should be considered second growth wanting to forest.

Nov 27 Bele R., 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
1 <sup>ad.</sup> brought in by natives. (Skin being made up)

Nov 29 Bele R., 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
1 <sup>Juv.</sup> brought in by natives

Dec 3 Bele R., 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
1 brought in by natives. (Skin being made up)

Jan. 19 15 km SW Bernhard Camp, Inderburg R., Netherlands New Guinea 1800m.  
1 <sup>ad.</sup> in 28 steel traps. Brought in by collectors. Said to have been taken in runway over forest floor. Mossy forest conditions with scattered large trees, rather than second story growth and scattered clumps of undergrowth. Litter is common. There were 4 tits to 3 of which a young each was attached. The 4th tit was non-functional and much reduced in size. The young remained alive and firmly attached to the tits 4 or 4 1/2 hours after the animal ~~was~~ ♀ had been killed. One was pulled away from the tit by exerting



Dasyurus

a piece of 4 or 5 lbs. The other two were cut loose by simply cutting the tit. The one which was pulled free frequently uttered a hissing squeak, similar to freed young Phascogales, the other 2 remained silent. The plug which remained in the mouth of the 2 probably prevented them uttering squeaks although they were in apparently the same state of misery. The fact that the freed young from the tit uttered a sound may be of survival value to the young. Certainly the noise uttered even to human ear could be heard several yard distances. I am wondering if the young are not unconsciously detached from the tit for the period of the mother is of little or no value as far as the protection of the young are concerned. It consists of a fold of skin some 8 cm. in depth anteriorly ~~and the lateral of the~~ extending laterally posteriorly <sup>terminating to</sup> a distance of about  $\frac{3}{4}$  the pouch area. This would indicate that the pouch has a tendency toward a posterior opening but the fold of skin is the only <sup>indication of</sup> ~~strain~~ rather than a true pouch. [See April 1st notes]

Feb. 15 6 km SW Bernard Camp Denbury R. Netherlands New Guinea 1200 m.

1 <sup>juv.</sup> in 224 rat traps. This individual taken in trap set ~~in~~ in small runway at the edge of a stone. Habitat <sup>was covered</sup> the rocky hillside with scattered podagraceous & ferns. The individual had been eaten while in the trap apparently by another of its own kind. There are no other animals here except dog with the ability to bite through the skull. The fleshy parts were eaten but the intestines, liver, stomach etc ~~was~~ remained.

Feb 18

1 <sup>juv.</sup> in 223 rat traps. Brought in by collectors. This juvenile had in stomach remains of large grubs, that is insect larva.

Feb 20

1 <sup>juv.</sup> in 225 rat traps. Brought in by collectors. The pouch area and bits of this young & slightly differentiated and very small. Stomach contained insects remains.



Feb. 23 6 Km SW Bernard Camp Dinkburg River Netherlands New Guinea 1200m.

1 in <sup>JUV</sup> 221 traps. Brought in by collector

Feb. 28 1 in 17 steel traps.

Stomach empty. Penis is bifid ~~and~~ ca was on of the species of *Phascogale*. It was slightly larger but proportions the same.

Apr. 1 4 Km SW Bernard Camp Dinkburg River Netherlands New Guinea 850m.

4<sup>(JUV)</sup> in 207 rat traps. Brought in by collector.

Taken in trap set in small runway in the undergrowth of the river bank at the lower edge of the flood plain. The pouch contained 3 juveniles (see alacubus). This pouch shows definitely that the pouch opening tends to be <sup>posterior</sup> rather than anterior ~~as I had previously thought~~.

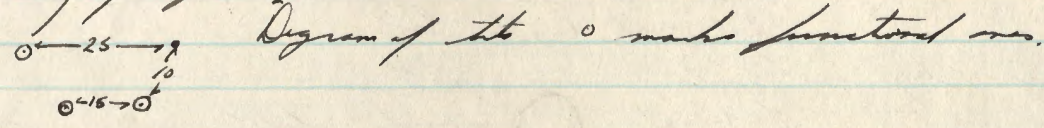
The pouch opening is the same size as the pouch area but with anterior walls being forming a protective flap.

Posterior edge of pouch <sup>area</sup> to vagina 20 mm.

Posterior edge of pouch <sup>area</sup> to posterior tit row 13 mm.

Pouch area 40 x 40 mm.

Opening of pouch 40 mm diam.



The posterior walls of pouch.

Lateral walls 20 mm.

Anterior wall 25 mm. When ~~the~~ laid down it reaches the posterior row of ~~the~~.

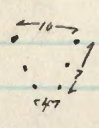
The food in stomach.

Apr. 5 1 in 90.33 snags. Brought in by collector.

Posterior edge of ~~post~~ pouch area to vagina 28 mm.

Posterior edge of pouch area to posterior tit 5

Pouch area 15 x 15 mm.



This is a pair of the small, non lactating, covered by the dense, rather stiff hair of the pouch area. The pouch area has very small lateral wall, not on 2 mm high and no anterior or posterior wall. There is concentration of hair on



Dasyurus

the pectoral area as if ~~the~~ the area had contracted and thus concentrating the hair. Stomach contained remains of insects. Ovaries enlarged.

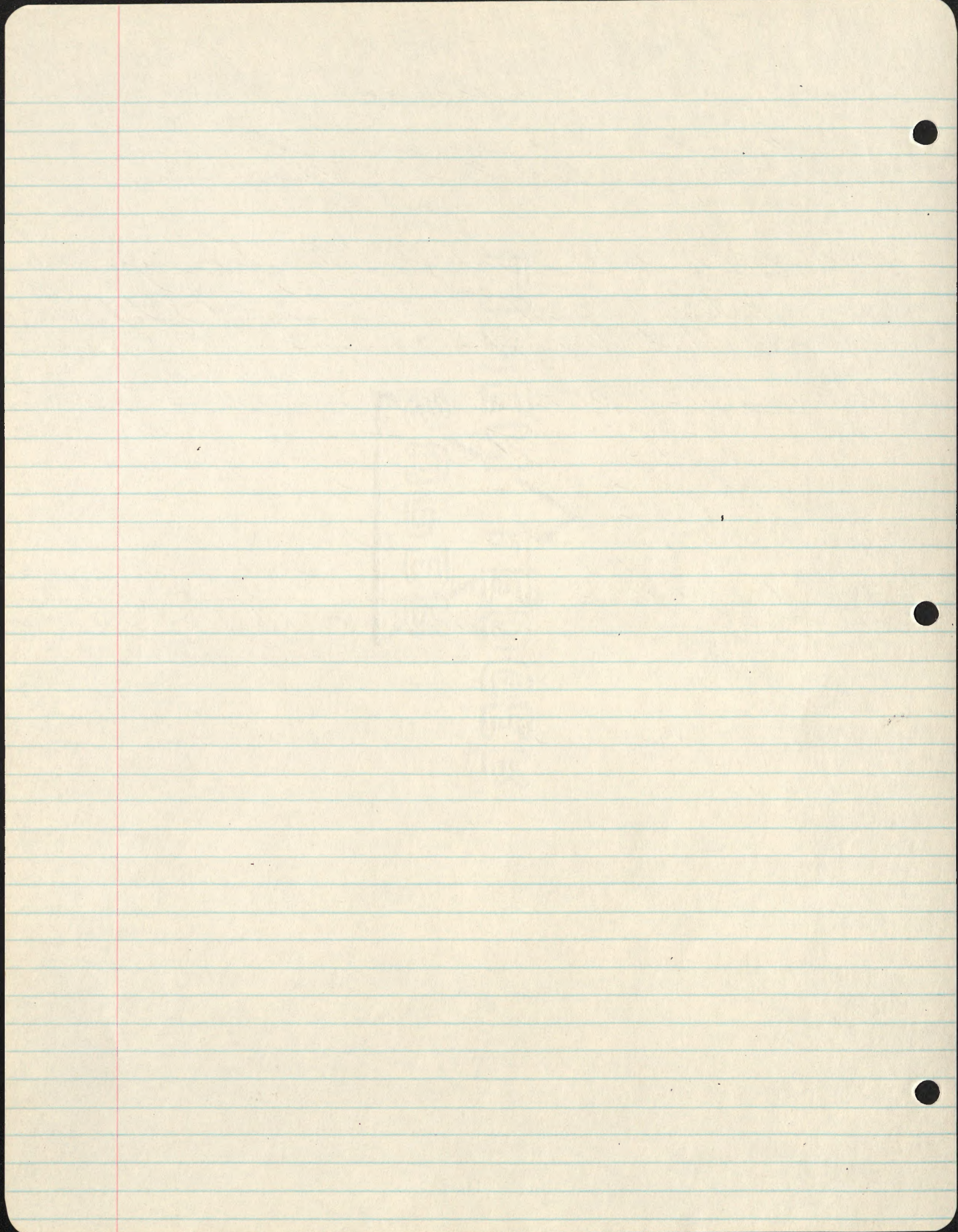
Apr. 7 4 km. SW Burnard Camp, Idenburg R., Netherlands New Guinea 850 m.  
1 in 1875 spars. Brought in by collectors. Stomach contained remains of what appeared to be a young *Echymipera*. ♂ very long

Apr. 16 Burnard Camp, Idenburg R., Netherlands New Guinea 75 m.  
1 in 259 rat traps. Taken in a small protected runway beneath a small log in open forest of lower mountain slopes above flood plane.

Apr. 17 3 in 259 rat traps. Taken in same vicinity as the individual taken yesterday. Believe that they are of the same litter. No pectoral development of fur. Pouch area distinguishable due to difference in hair.

1 specimen taken from Cyclops Mts by Chibi



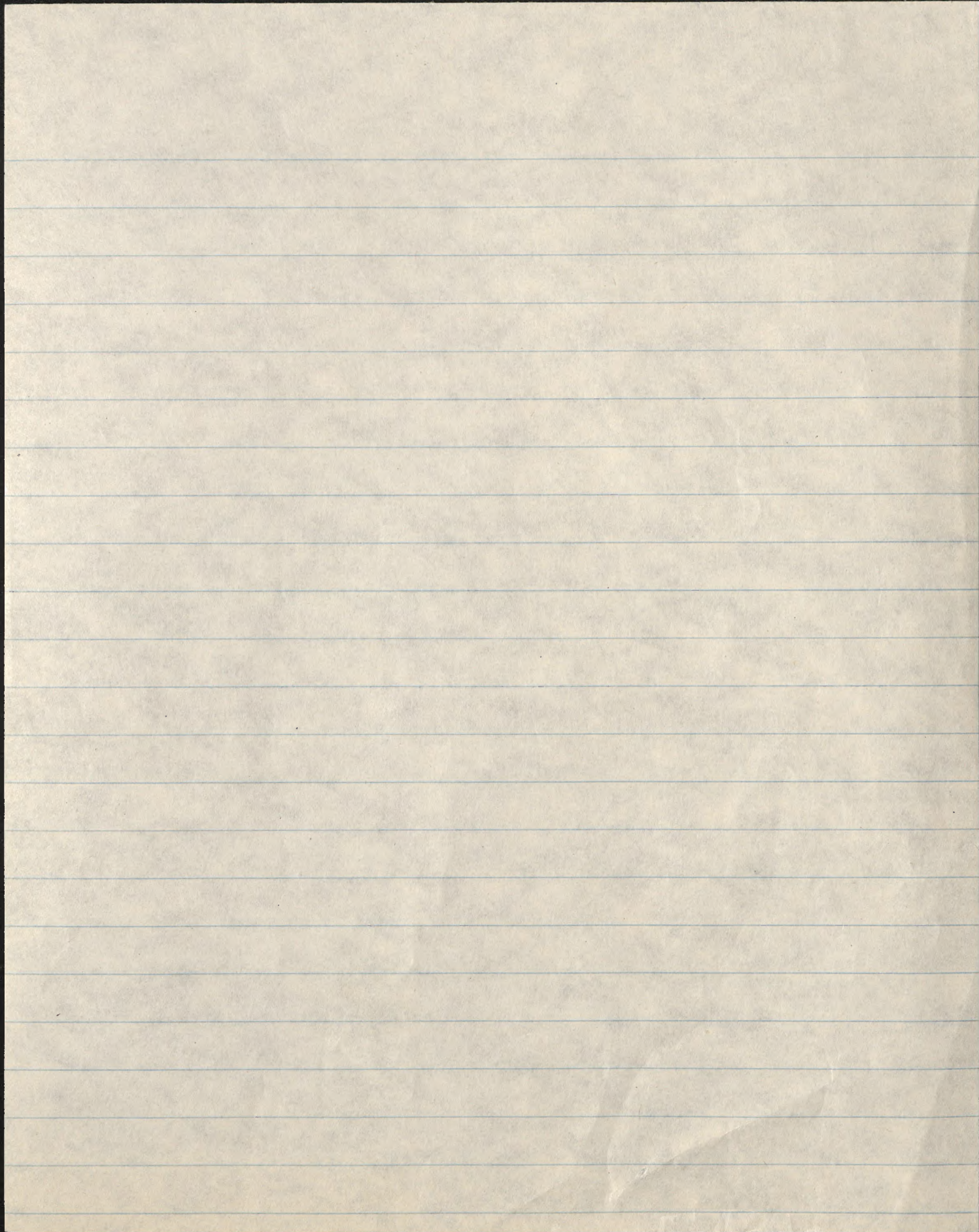




Dendrolagus finschi - A number of individuals were purchased the nation of Hollandia. According to them these animals were found not uncommonly in large of the heavy rain forest. Several were brought in alive and retained in large cages from June 1938 to May 1939. At this time 5 of them were crated and they traveled with me to Java where one was deposited in the Soerabaya Zoological Gardens, one to Australia where one was given to Taronga Park, and the other three were brought to the National Zoological Gardens in Washington, D.C. It was from these captive animals that the following observations were made.

Locomotion - Although the hind limbs are smaller and the front limbs larger than that of a kangaroo locomotion over the ground was of the same type. Hopping about on the hind feet with the front feet held against their chest only occasionally putting them down when moving very slowly







or to terminate a series of rapid hops.

While in motion the tail is held off the ground and seems to serve as an organ of balance.

In climbing up a pole the animals use a hopping gait.

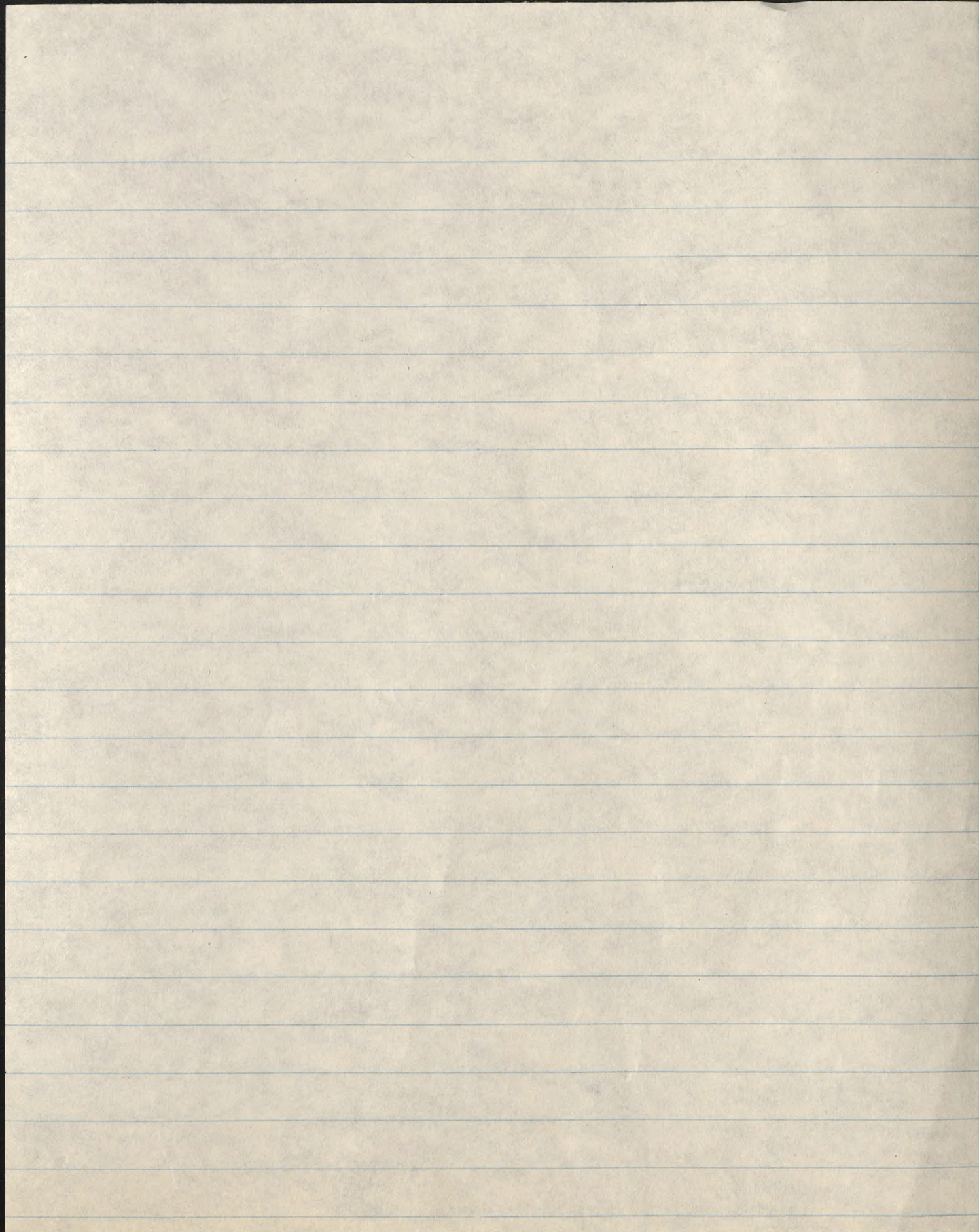
The hind feet are toed outward so that the inner fleshy part of the <sup>long</sup> rough sole pad bears the weight of the animal rather than the claws of the hind feet. The <sup>front feet in</sup> climbing a pole, a foot in diameter or less, are used opposing each in a clasping fashion.

In scaling trees too large for clasping the long claws are held ridgely in a hook-like position in relation to the fore ones thus catching onto irregularities in the bark.

The digits are not opposable in either the front feet or hind feet as they are with Chelonoides. Progressing along a horizontal cage pole of (2"-3") diameter was accomplished with a crawling type utilizing all four feet.

When the end of such a pole was reached rather than turn about it would walk



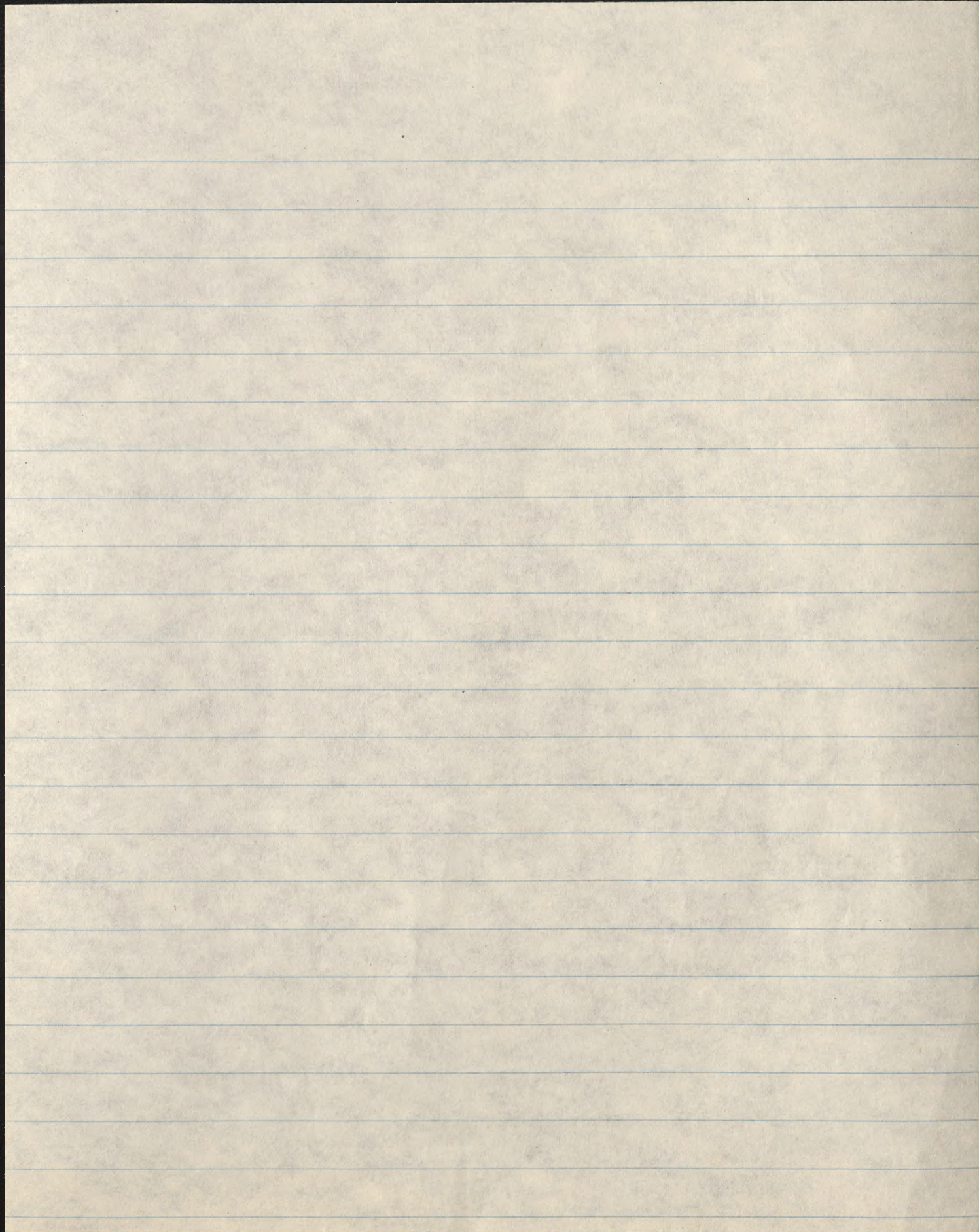




backwards along the stil with a shuffling motion. Although they were able to maintain their balance while turning about they seemed to prefer the backward step to turning on a small pole. On descending a pole they do so with shielding legs of the hind feet while the front feet creep as they lower themselves land over land.

Food:— Their cage food which they have been fed at different times is as follows: Banana with a preference for the skin; sweet potatoes with also a preference for the skin; sweet potato greens; papaya are eaten occasionally; apples; young coconut meat and inner husk; leaves of several wild herbaceous plants and grasses; ~~and~~ cultivated vegetables such as carrots, lettuce, turneps, spinach etc.; and displayed quite a passion for bread butter and jam. They seemed to be gone vegetarians although meat of various sorts was given them on different occasions it remained uneaten. Eating was accomplished





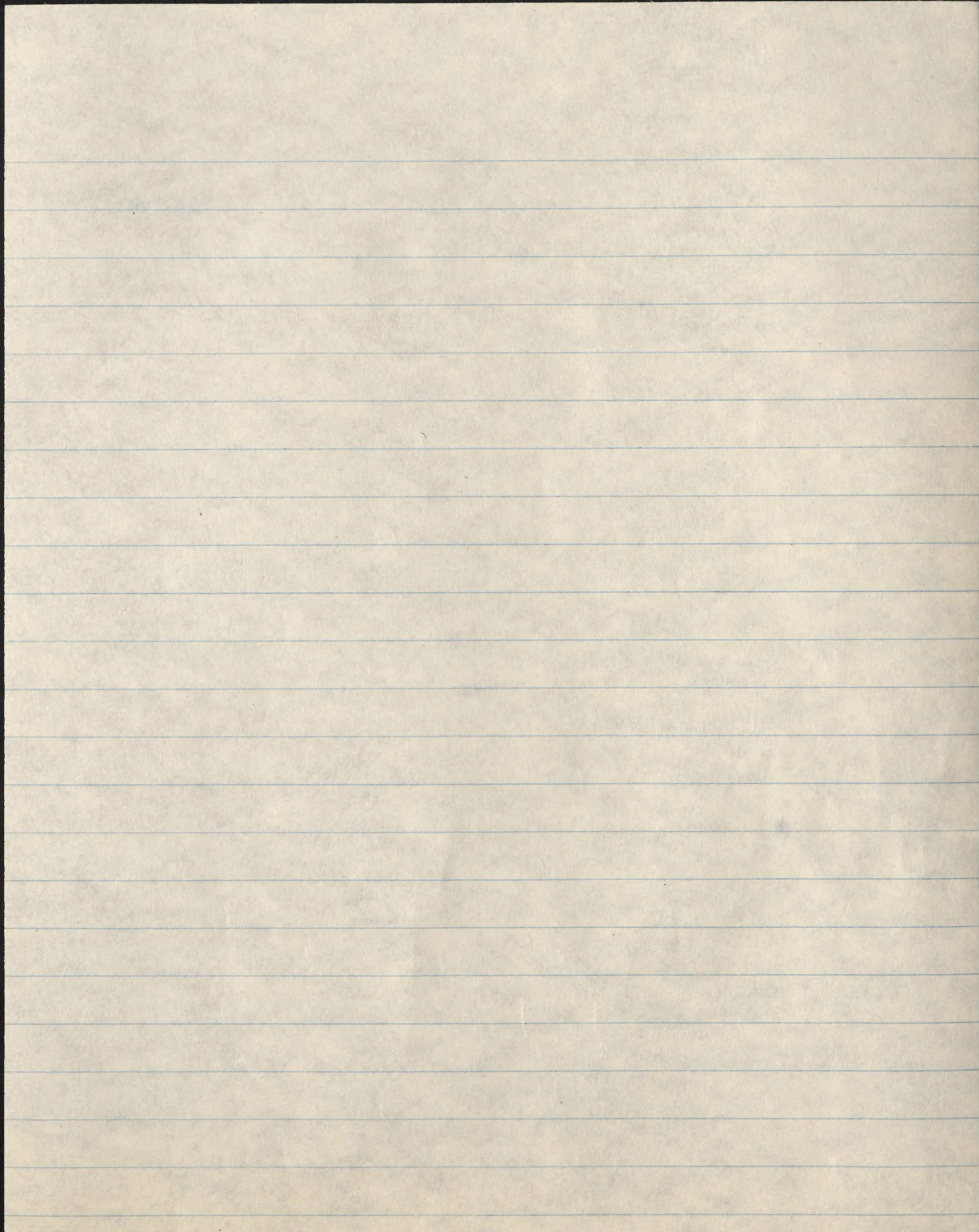


by holding the food between the front paws, much as the Phalanger does; and shoving the lower incisors into the food, and then biting off a piece by bringing the upper incisors down against the lower ones. When eating grain after a single stalk will be left hanging out of the corner of their mouth as mastication slowly guides it up.

Voices - was heard only when injured during their rough play with each other. This sound was a low airy squeak repeated frequently. When being raised off of the ground they would sometimes utter a "hee" which was little more than air passing through the mouth.

Activities - The animals which were housed together, sometimes as many as three or four in a single cage, would play, eat, and sleep together without apparent antagonism. Their periods of greatest activity were during the morning and again in the evening. They were usually found sleeping

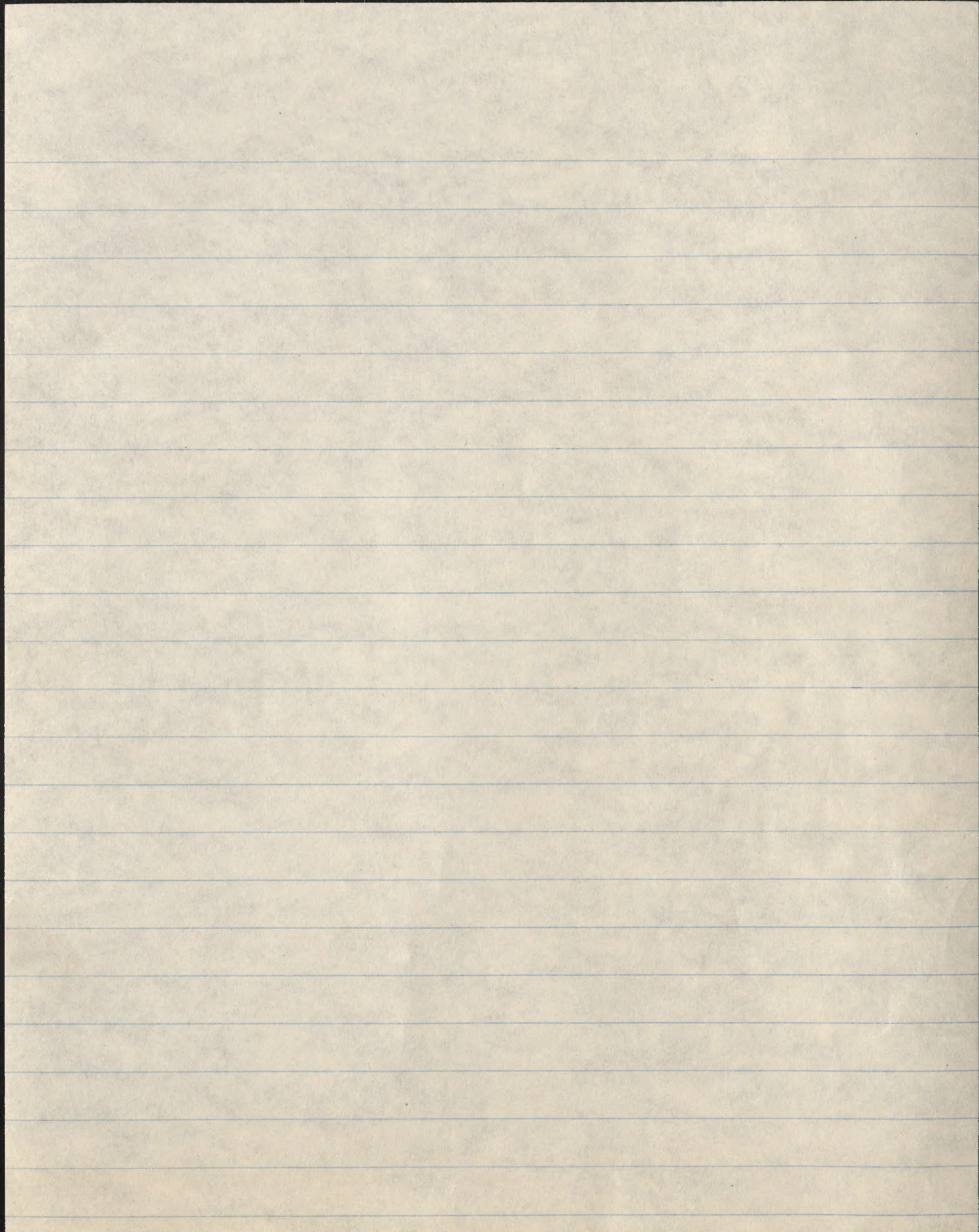






during the mid day as well as during the  
darker part of the night. Most of their  
time was spent <sup>on shelves</sup> near the top of the cage,  
coming down only to eat or drink.







Dendrolagus firschi. - A number of individuals were purchased from the natives of Hollandia. According to them these animals were found not uncommonly in large <sup>^</sup> of the heavy rain forest. Several were brought in alive and retained in large cages from June, 1938, to May, 1939. At the time 5 of them were crated and thus traveled with me to Java, where one was deposited in the Soerabaga Zoological Gardens, on to Australia, where one was given to Tanonga Park, and the other three were brought to the National Zoological Gardens in Washington, D.C. It was from these captive animals that the following observations were made.

Locomotion. - Although the hind limbs are smaller and the front limbs are larger than those of a kangaroo, locomotion over the ground was of the same type. Hopping about on the hind feet with the front feet held against their chest, only occasionally putting them down when moving very slowly, or to terminate a series of rapid hops. While in motion the tail is held off the ground and seems to serve as an organ of balance. In climbing up a pole these animals use a hopping gait. The hind feet are toed outward so that the inner fleshy



Observations on the Behavior of the

from the records of the animals, according to their habits were

found for the purpose of the study. In 1950, several

were brought in alive and released in the same place in 1950.

to 1950. At the time 5 of them were tested and their behavior

was found to be very different from the behavior of the other

animals, or to be similar, many were released to their original

the other mice were brought to the original ecological conditions in

the laboratory, it is to be noted that the following

the observations were made.

As a result of the study it was found that the

times the larger than those of a kangaroo, locomotion over the ground

was of the same type. Mating season on the island was found

that mice against each other, or the possibility of getting them down

when moving in a group, or to determine a series of trials.

When in motion the tail is held off the ground and seems to serve

as a kind of balance. In standing on a solid surface the tail

is held out. The tail is used as a counterweight to keep the body



part of the large rough sole pad bears the weight of the animal rather than the claws of the hind feet. The front feet in climbing a pole a foot in diameter or less are used opposing each other in a clasping fashion. In scaling trees too large for clasping, the large claws are held rigidly in a hook-like position in relation to the foot, thus catching into irregularities in the bark. The digits are not opposable in either the front feet or hind feet as they are with Phalangers. Progress~~ing~~ along a horizontal cage pole of 2"-3" diameter was accomplished with a crawling hop, utilizing all four feet. When the end of such a pole was reached, rather than turn about, it would walk backward along the stick with a shuffling motion. Although they were able to maintain their balance while turning about, they seemed to prefer this backward shuffle to turning on a small pole. On descending a pole they do so with sliding hops of the hind feet, while the front feet clasp as they lower themselves hand over hand.

Food. - Their cage food which they have been fed at different times is as follows: bananas, with a preference for their skin; sweet potatoes, also with a preference for their skin; sweet potato







greens; papaga are eaten occasionally; apples; young coconut meat and inner husk; leaves of several wild herbaceous plants and grasses; cultivated vegetables, such as carrots, lettuce, turnips, spinach, etc., and developed quite a passion for bread, butter and jam. They seemed to be pure vegetarians; although meat of various sorts was given them on different occasions, it remained uneaten. Eating was accomplished by holding the food between the front paws, much as the Phalanger does; shoving the lower incisors into the food, and then biting off a piece by bringing down the upper incisors against the lower ones. When eating grass often a single stalk will be left hanging out of the corner of their mouth as mastication slowly grinds it up.

Voice. - This was heard only when injured during their rough play with each other. The sound was a low airy squeak, repeated frequently. When being raised off the ground they would sometimes utter a "hee" which was little more than air passing through the mouth.

Activities. - The animals which were housed together, sometimes as many as 3 or 4 in a single cage, would play, eat and sleep together without apparent antagonism. Their periods of greatest



General remarks are given occasionally, especially when a new point is raised.

and their length, however, is several times that of the normal and is

difficult to see, but it is not as long as the normal, and is not as

and is not as long as the normal, and is not as long as the normal, and is

to be seen in the normal, and is not as long as the normal, and is

them on either side of the normal, and is not as long as the normal, and is

rather of the normal, and is not as long as the normal, and is

rather of the normal, and is not as long as the normal, and is

the old of the normal, and is not as long as the normal, and is

them, when being given in a single case, will be left in the

out of the normal, and is not as long as the normal, and is

rather of the normal, and is not as long as the normal, and is

rather of the normal, and is not as long as the normal, and is

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rather of the normal, and is not as long as the normal, and is



activity were during the morning and again in the evening. They were usually found sleeping during the midday, as well as during the darker part of the night. Most of their time was spent on shelves near the top of the cage, coming down only to eat or drink.



...the ...  
...the ...  
...the ...  
...the ...



Wm B. Richardson  
1938

## Dendrolagus

June 24 Hollandia, Netherlands New Guinea

Purchased the tail of one of these species from a native from Ingros. According to his story it was caught on the main land, in the large jungle (rain forest) south of his company Ingros.

June 30 Hollandia, Netherlands New Guinea

Purchased another tail from a native from Ingros. The animal was probably taken in or near the same forest as the animal above (June 24).

July 3 Hollandia, Netherlands New Guinea

Purchased half grown young, one ♂ and one ♀, from Mr. Keiser a planter living some 15 kilometers south of Hollandia (lives on the southern shore of the inner bay). These two animals will be kept alive for study.


July 18 Hollandia, Netherlands New Guinea

The following is the life history notes accumulated during the past 15 days on the two tame Dendrolagus which were purchased from Mr. Keiser.

Coloration and markings - There is no difference in the coloration of the <sup>sub-adult</sup> ♂ and ♀ with the exception of the overcoat of brownish red which is more apparent on the ♂. The general color is a dark grizzled gray which is almost black <sup>about the head</sup> on the back and face and shades to a light gray on the dorsal surface. The face is black including the muzzle, the anterior part of the lower jaw, about the eyes and extending backward to the mid point between the eyes and ears where the back meets a lighter gray stripe. There is a few gray hairs in front of the eyes and upper muzzle. The ears are black inside and out. Between the ears and running forward to the light gray band above the mask is a dark grizzled gray (continuation of shoulder color) with a reddish brown over coat. The cheeks and the lower jaw are



a light gray, to an almost white spot on the superior  
throat region; the lower throat having the grizzled  
light gray similar to the <sup>throat</sup> ~~throat~~ <sup>throat</sup> ~~throat~~. The neck,  
shoulders, fore limbs, <sup>(dorsally)</sup> <sup>darken</sup> are a dark grizzled gray with  
a darker shade above <sup>and</sup> the fingers. The dorsal surface  
back from a point behind the shoulder blades  
to the base of the tail is a dark brownish  
black shading off on the sides to a dark  
grizzled gray. This color has a definite brownish  
overcast which is more intense above the base  
of the tail and slightly intensified dorsally.  
The hind limbs are much like the front  
in color with a dark grizzled gray terminating  
in <sup>(line of feet)</sup> almost black digits. The belly about the  
perineum is almost white shading outward into a light  
gray. The ♂ has a solid gray belly. In both sexes  
the color becomes darker the further it is away from  
the mid <sup>region</sup> dorsal line. Between the hind legs it tends  
to be lighter gray corresponding to that of the mid belly. The  
tail is a dusky gray with rather broad intensified spots of  
darker gray. There is ~~no~~ apparent tendency to band.  
Its general color is a light gray which is  
lighter ventrally as well as terminally, the tips being almost  
white. There is a general over shade of a brownish  
red which is more apparent toward the base of the  
tail than terminally.

Locomotion - As near as I can determine  
its locomotion while on the ground is similar  
to that of a kangaroo. It hops about on its  
hind feet without placing its front feet to the ground.  
The front feet are used in terrestrial locomotion only  
when a very slow hop is made or to terminate a  
series of rapid hops. In climbing eyes  
poles they use a similar hopping gait with the  
hind feet <sup>held out</sup> <sup>so as</sup> to grasp with the inner fleshy  
part of the very web <sup>for the weight of the animal</sup> rather than with the  
claws. The front feet are used <sup>for</sup> <sup>climbing</sup> by  
grasping with the two feet <sup>clinging</sup> <sup>to</sup> <sup>the</sup> <sup>rough</sup> <sup>surface</sup> <sup>with</sup> <sup>their</sup> <sup>claws</sup>. I have  
seen claws may be turned like so -  The digit







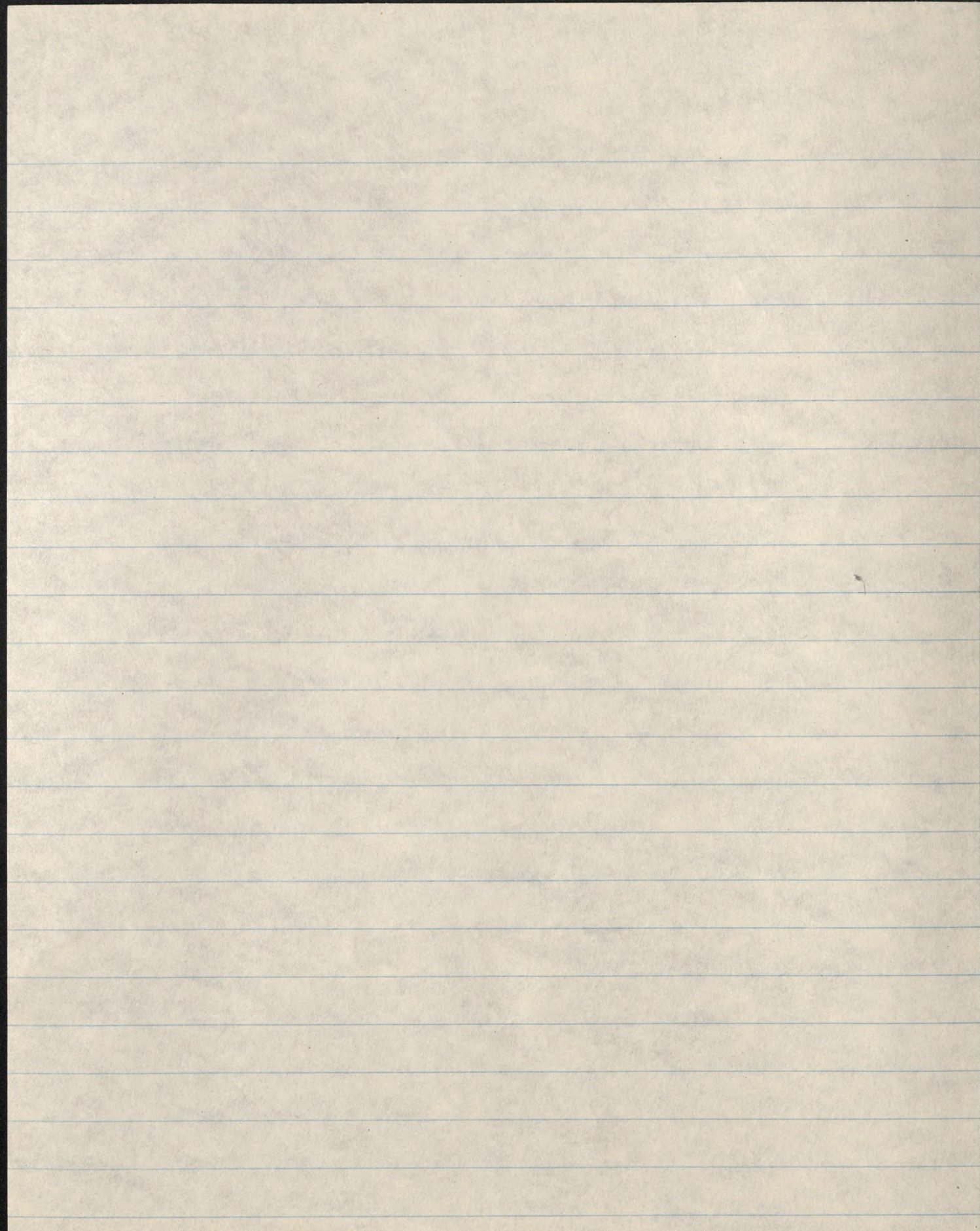
play they utter a low <sup>airy</sup> squeak repeated frequently.

Miscellaneous notes. - When running they hold their tail off of the ground and directly behind the front feet <sup>(touching ground)</sup> in running <sup>only</sup> to keep balance. At their present age this is a great deal of play activity consisting of grasping, and nipping each other as well as running around.



Dabronia (large sp.) - Thirty seven specimens of this species were obtained from the vicinity of Hollandia. 8 were brought in by a collector from 4 km W Tobati and the other 29 were taken from "Tanjura Ska" 11 km SE of Hollandia at the eastern edge of Humboldt Bay. Here large limestone cliffs had been eaten into by the action of the sea forming grottoes at the water's edge. It was the larger of these caves that we examined. Only a few bats were seen as we first entered, these flying from one dark crack to another. After the first shot was fired they flew out in large numbers from the two large dark fissures in the height (100-150 ft) ceiling, filling the air with harsh squeaks and danging. They came to rest congregated in groups on the ceiling. There were between 750 and 1000 individuals of this species in this cave, both sexes and all ages. This would indicate that there



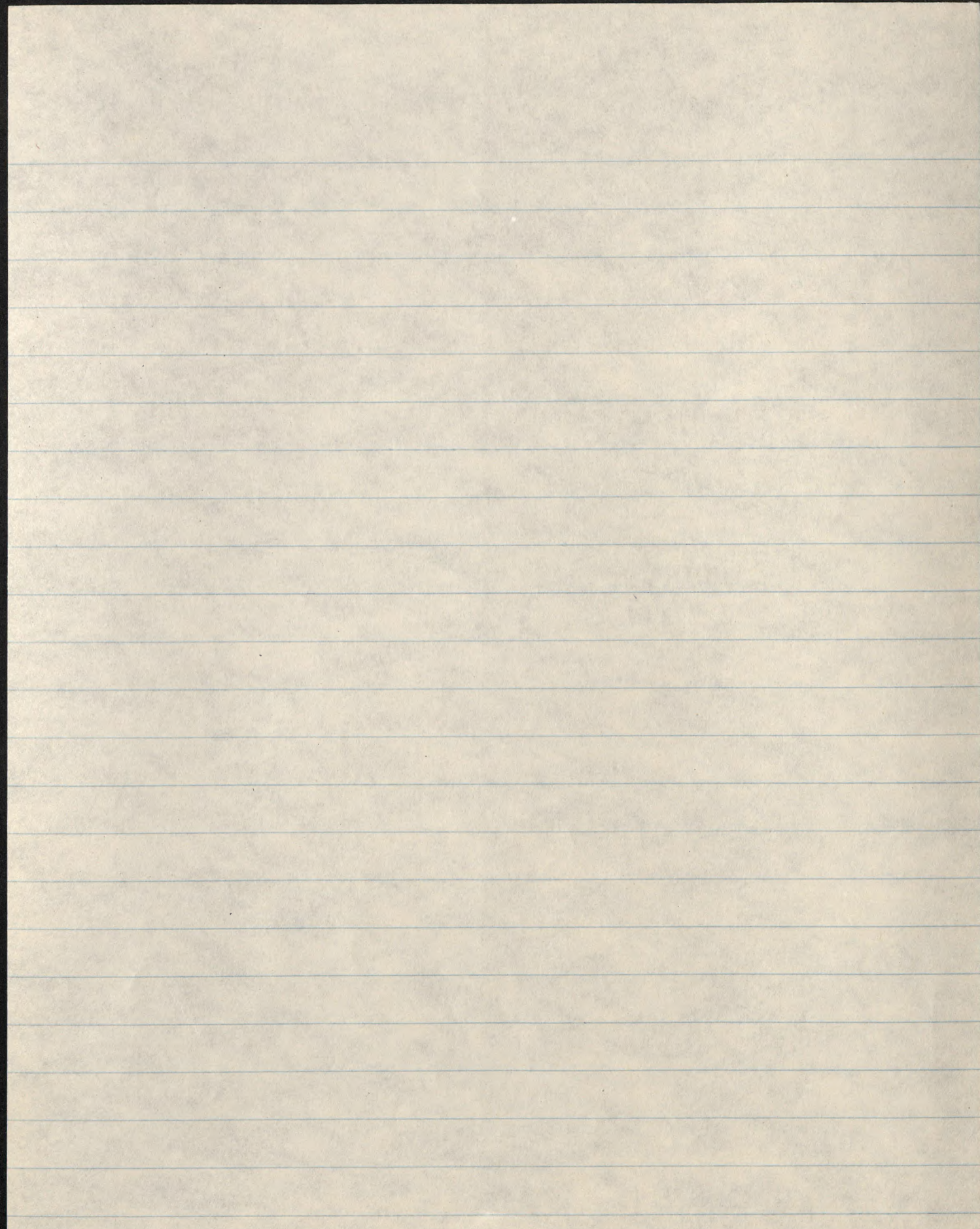




was no well defined breeding season. This was not only apparent on examination of individuals but also by the embryos of different stages of development found in the ♀s. Only one embryo per female. There were two other species of bats Miniopterus, and Myotis which inhabited the same cave.

Five individuals were taken from Bernhard Camp. Two of these were brought in by collectors from the rain forest. Two others were while hanging up together beneath the same large leaf leaf a fan palm about 4 m above the rain forest floor. The other was taken under a similar fan palm leaf about 3 m above the ground. Of interest is the fact that in all instances the ♀s were found hanging up solitary while as the ♂s hang up in pairs. The same condition was found with the smaller species of the same genus.





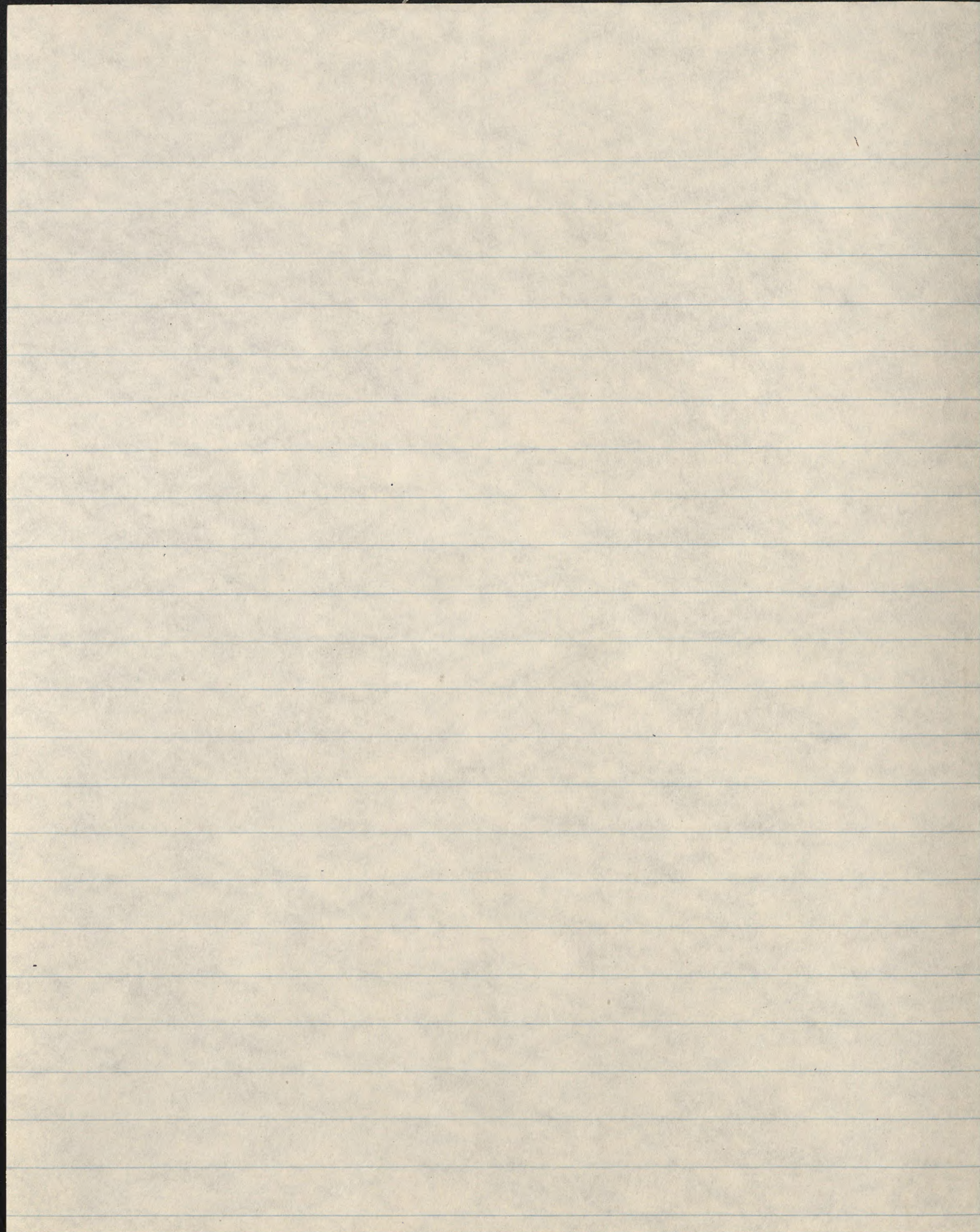


Dobsonia (small sp.) - Six of the species

were taken at the Burned Camp. Their daytime  
 daytime habits were much the same as that of  
 the larger species clinging to the lower side  
 of the large <sup>leaf</sup> palm. One was found hanging <sup>from the leaf</sup>  
 8 ft above the forest floor, on other records of  
 this sort were given. One individual taken by  
 a collector was seen flying <sup>at 15 ft</sup> above the forest  
 floor and occasionally lighting on the leaves  
 and small branches of one of the trees of the  
 substage. My collecting boy said it was eating  
 the leaves of one of these trees (Eucalyptus) the  
 leaves of which they themselves cooked. Its flight  
 was moderately fast, steady, and even without  
 breaks or <sup>or</sup> found in insectivorous bats. It  
 would sometimes hover over the trees for 20  
 seconds or more before alighting. As  
 with the larger species the sexes of this  
 species were found hanging in pairs while  
 the ♀s hang up solitary.

A single specimen was brought in from  
 the Cyclops (Cyclops Mountain) by a collector.







Dobsonia (large sp.). - Thirty-seven specimens of this species were obtained from the vicinity of Hollandia. Eight were brought in by a collector from 4 km. west of Tabati and the other 29 were taken from "Tanjun Shi", 11 km. S.E. of Hollandia at the eastern edge of Humboldt Bay. Here large limestone cliffs had been eaten into by the action of the sea, forming grottoes at the water's edge. It was the larger of these caves that we examined. Only a few bats were seen as we first entered, these flying from one dark crack to another. After the first shot was fired, they flew out in large numbers from the two large dark fissures in the high (100-150 feet) ceiling, filling the air with harsh squeaks and dung. They came to rest congregated in groups on the ceiling. There were in this cave between 750 and 1000 individuals of this species, both sexes and all ages. This would indicate that there was no well defined breeding season. This was not only apparent on examination of individuals but also by the embryos of different stages of development found in the ♀'s. Only one embryo per female. There were two other species of bats Miniopterus and Myotis which inhabited the same cave.

Five individuals were taken from Bernhard Camp. Two of them were brought in by collectors from the rain forest. Two others were taken while



... (1978) ...

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hanging up beneath the same large leaf of fan palm about 4 m. above the rain forest floor. The other was taken under a simalar palm leaf about 3 m. above the ground. Of interest is the fact that in all instances the ♀'s were found hanging up solitarily whereas the ♂'s hung up in pairs. This same condition was found with the smaller species of the same genus.



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Dobsonia (small sp.). - Six of this species were taken at Bernhard Camp/ Their daytime haunts were much the same as those of the larger species, clinging to the lower side of the larger ed fan palm. One was found hanging from the leaf 8 feet above the forest floor; ~~XXXXXXXX~~ no other record of this sort were given. One individual taken by a collector was seen flying some 15 feet above the forest floor and occasionally lighting on the leaves and small branches of one of the trees of the substage. My collecting boy said it was eating the leaves of one of these trees (Eretum), the leaves of which they themselves cooked. The flight was moderately fast, steady, and even without breaks as is found in insectiverous bats. It would sometimes hover over the tree for 20 seconds or more before alighting. As with the larger species, the ♂'s of this species were found hanging in pairs, while the ♀'s hung up solitarily.

A single specimen was <sup>N</sup>bought in from the Cyclops (Cyclops Mountains), by a collector.



1900 (small sp.) - Six of this species were taken at

between 1900 and 1905. Their numbers were much the same as those of

the larger species, and in some cases they were taken in the same

places. One was taken during the late 1900s above the town

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Wm. D. Richardson  
1938

## Dobsonia

July 5 11 km. SE Hollandia, Netherlands New Guinea

July 5, 1938 - Shot 29 of this genus this afternoon. They were taken in a sea cave. Near a limestone cliff borders the ocean which by the action of the waves has been eaten away forming large holes or caves at the surf edge. We went into the larger of these caves and from which the bats were taken. Only a few were seen at first (50-100) flying from one dark hole or crack to another. After the first shot they flew out in large numbers from two large <sup>higher</sup> dark cracks in the high ceiling (700-1500 ft) <sup>highly</sup> and congregated in large groups on the ceiling. They were easily disturbed filling the air with loud squeaks and chirps. I can't think of anything dumber than a disturbed <sup>in</sup> cave in the large numbers and close quarters that these were here. It was a striking filthy mess. As already mentioned there were large numbers of bats in the cave. I would estimate that there was somewhere between 750-1000 individuals. [According to Roman and Steen a number flew out of the cave and alit in the bushy jungle along the coast above the cliffs.] There were both sexes and all ages. Apparently there is no breeding season. This was not only apparent by individuals but <sup>also</sup> by the embryos of differing stages of development. Those <sup>of</sup> ♀'s having embryos had only one. There were two other species of bats in the same cave Miniopterus, and Megotis

July 9 Hollandia, Netherlands New Guinea.

Six<sup>ty</sup> (6) individuals were brought in by a Papuan today. According to him they were taken from a cave near Mr. Birkmore's house. His house being located 2 km. inland <sup>(west)</sup> from Pm.

July 14 km. W Sabatu, Netherlands New Guinea.

Two of this genus were brought in today from the same man and probably from the same place. These bats, however,



appeared to be shot, probably while feeding on the kapok fruits or flowers. They were 4 *Pteropus* brought in with the *Deleseria*.

Apr. 12 Bernand Camp, Idenburg R., Netherlands New Guinea 80 m.

2. <sup>1 by Rand</sup> shot yesterday. <sup>2 of the small sp.</sup> was flying some 15 ft above the forest floor and occasionally lighting on the leaves and small branches of one of the second stage trees. My collecting boys said it was eating the leaves of this tree for they themselves use these leaves for their "siung". The flight was moderately fast, but steady and even with no breaks. It would sometimes flutter or rather hover over the leaf for 20 seconds or more. <sup>♀</sup> The larger species was shot by Rand and sent over to our camp for preparation.

Apr. 17 <sup>♂♂</sup> 2 <sup>small</sup> shot ~~just~~ this afternoon by my collecting boy. According to him they were hanging on the under side of a large large leaf in the forest.

Apr. 19 <sup>♀</sup> 1 <sup>small</sup> shot by Rand.

Apr. 25 <sup>♀</sup> shot by collecting boys. # 7915 ♀ hanging up solitary under <sup>the</sup> palm leaf some 3 meters above the ground in the forest at the upper edge of the flood plain. The other two # 7906 & # 7907 <sup>large</sup> ♂♂ taken on lower flood plain. Hanging beneath leaf of fan palm 4 m. above ground. These two alone hanging together under same leaf. <sup>♀</sup> # 7919 <sup>small</sup> was shot by collecting boy from under palm leaf in forest.

Apr. 28 <sup>small</sup> ♀ shot. Found landing under leaf of fan palm some 8 ft above ground.

May 4 <sup>1 ♀ large</sup> shot by Rand collecting boy.



Dorcopsis

June 24 Hollandia, Netherlands New Guinea.

A male of this species was brought in this afternoon by a Papuan. According to his story he caught it in "Ulong Yar" a jungle near Hollandia. I would judge from his pointing and mumbling that it was taken about 1 mile south of Hollandia. During my stay here I have heard 1 of these beasts as it ran through the forest. It was in a thick second growth forest near the top of a small hill  $\frac{1}{2}$  mi. south west of Hollandia. Purchased for 3.00 guilder.

June 25 Hollandia, Netherlands New Guinea

Another wallaby was brought in this ~~morning~~ afternoon by the same Papuan who brought in yesterday. I assume then from that it was taken in the same jungle as yesterday for as a rule on most restricted men as he is of the bounds of a certain jungle. He had prepared the skin in such a poor fashion that I paid him only 2.00 guilder for the skin plus the skull.

June 26 Hollandia, Netherlands New Guinea.

Purchased (3.00 guilder) another wallaby today from the natives. Their campsite is "Ya pas a" and according to them the beast was caught in utang (forest) "Yaw" north west of Hollandia (1 mi?)

June 27 Hollandia, Netherlands New Guinea

4 Wallabies were brought in by a single individual. They were purchased, 2.00 guilder for the smaller ones, 2.50 for the larger. Number # 4084 and #4085 were taken in Utang (forest) "Ya sok" which according to the natives is 1 kilometer south of Hollandia. The other #4086 was taken in Utang "Mominic" two kilometers south of Hollandia. I do not know where #4088 was taken. The three females with the possible exception of #4086 had been suckling young evidence of which was #4088



enlarged mammary gland <sup>(one)</sup> in this pouch.  
) cut out this genital system and no  
embryos were found. One of them is preserved  
for further examination. According to the  
natives who brought them in their young  
had escaped during the capture of the  
adults. I do not know for sure how they  
take the animals but from the condition  
of the animals it appears that they are  
caught in a snare or dead fall. [insert, see below)

June 28 Hollandia, Netherlands New Guinea.

Yesterday evening the 3 Dyak collectors and  
I went hunting with flash light. One hundred  
and 25 yd south (along trail) of Van Sailer's I  
caught the eyes of two Dorcopsis. They were  
standing along the side of the trail conscious  
of my presence but apparently not nervous.  
I shot an adult female and her young (#4089  
and #4090) the other escaped along a small  
trail through the rain forest. The general  
country in which the animals were taken  
was a heavy rain forest, one of the heaviest  
in the region. There are however numerous  
small trails about which might serve as  
avenues of escape for the animal, then to the  
heavy cover of the jungle tends to blanket  
out the undergrowth making the country  
suitable to the fossorial habits of the animal.  
The eye shine was a rich yellow with a bit of  
orange.

This afternoon the wallah hunter (Pegson)  
came in with another animal #4094. It was  
caught according to him in Elong "Pate" 1 kilometer  
south east of Hollandia. I inquired into his  
methods of catching them and he said with dogs.  
It is apparently a successful way to get them.

June 30 Hollandia, Netherlands New Guinea.

This afternoon I purchased (3.00) an adult ♂. According



Wm. B. Richardson  
1938

2

## Dorcopsis

to the boy who brought it in it was taken in utang  
"Kato bar ro" 10 kilometers south of Hollandia. It was  
apparently taken somewhere south of Mr. Rinkman's plantation. #4164

July 2 Hollandia, Netherlands New Guinea.

Two males, one adult and one sub-  
adult were brought in yesterday evening  
by Papuans from Tolaki. According  
to them they were caught in utang  
"Sequant" between 5-7 kilometers south  
of Hollandia.

July 5 Hollandia, Netherlands New Guinea.

A local Papuan brought in 4 of this genus  
today. According to him they were caught  
in utang "Mominé". He had apparently used  
dogs in the capture. One individual although mangled  
is being kept alive for study. [Died July 6 #4176]

July 6 Hollandia, Netherlands New Guinea

Three individuals were brought in this  
evening by local Papuans. They said that  
these were taken in the jungle 1 km. west of  
Hollandia.

July 7 Hollandia, Netherlands New Guinea

Another individual was brought in late yesterday  
evening by a local Papuan. He did not say but  
apparently it was taken in the nearby jungle.

July 9 Hollandia, Netherlands New Guinea

Four of this species were brought in  
today by local Papuans. They were supposedly  
taken near Hollandia.

July 13 Hollandia, Netherlands New Guinea.

Two specimens brought in by Papuan  
who said they took them in the jungle at  
"Koto bar ro" near Mr. Rinkman's.



July 15 Hollandia, Netherlands New Guinea.

The three specimens prepared today were brought in by natives. I do not know the exact locality but probably they were from the immediate vicinity of Hollandia.

July 14 Hollandia, Netherlands New Guinea.

The four animals were brought in by local Papuans. Two of them #406 and #407 were said to have been taken in utang Hollandia, 2 km S W of Hollandia.

July 17 Hollandia, Netherlands New Guinea.

One animal brought in yesterday by a Papuan who said he shot it in utang Hollandia.

Oct 26 On N.E. Lake Habbema, Netherlands New Guinea 2800m.

1 in 17 steel traps. Individual caught in a trap set on a log (3ft in diameter) crossing above the stream. There was no well defined trail worn in the moss and ferns and plants growing on the log but there was evidence of it having been occasionally used, serving as a natural bridge.

Nov 13 Beh R., 18 km N Lake Habbema, Netherlands New Guinea, 2200m.

1 brought in by natives.

Nov 15 Beh R., 18 km N Lake Habbema, Netherlands New Guinea, 2200m.

1 brought in by natives.

Nov 24 Beh R., 18 km N Lake Habbema, Netherlands New Guinea 2200m

1 brought in by natives.

Nov 28 Beh R., 18 km N Lake Habbema, Netherlands New Guinea 2200m.

2 brought in by natives. A ♀ with its young.

Nov 29 Beh R., 18 km N Lake Habbema, Netherlands New Guinea 2200m

1 brought in by natives.



Dorcopsis

Jan 14 15 km SW Burnhead Camp, Denbury R., Netherlands New Guinea 1800 m.

1 in 28 steel traps. Taken in large running  
bush & suspended by. The log was seen 2 feet above the  
ground at the point where the beast was taken. There was one  
fruit trail, typical of this beast leading into this trail  
bush the log, following along for some 6 or 8 ft. and then  
going on into the forest.

Feb 20 6 km SW Burnhead Camp, Denbury R., Netherlands New Guinea 1200 m.

1 in 17 steel traps. Brought in by  
collector. Small but well formed pouch.

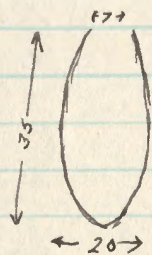
Feb. 25

1 in 17 steel traps. Brought in by collector.

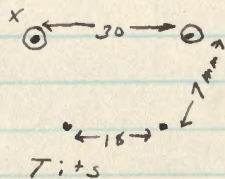
Notes on pouch which contained a single young -

Opening measured 35 mm long by 20 mm. broad  
Border (50 m.) of thin, short, light grey colored hair about edges.

Shape of opening is green oval with a 7 mm. space between  
anterior boss of lip. From posterior lip of pouch to



Pouch opening



region measures 95 mm. Pouch itself

is broad oval in shape measuring  
95 x 70 mm.; sparsely haired. Covering  
tits see diagram below. The 2 anterior ones

are functional that in lactating. The posterior  
pair thigh apparently enlarged as not  
lactating. The young was attached to

the eggs anterior left (marked x). Length of  
anterior tit 22 of posterior tit 10 mm.

From the anterior lip of the pouch to  
the anterior tit is 55 mm. # of

the two anterior tits, the right is  
the most enlarged, not the gland to

which the young was attached.

The young found in the pouch see # 7545  
alcoholic glass above and apparently uninjured.

Its activities were watched while it was in  
the pouch and then the tip to which  
it was attached was cut and its activities  
watched while it was on a board and again  
while being held aloft by the cut end of the  
tip. In all these conditions similar



activities and reactions were exhibited. No sense of equilibrium. Activities were a constant pawing with the front feet. The hind feet ~~remained~~<sup>were</sup> ~~together~~<sup>separated</sup> with slight movement from the hip but most movement from the lower spinal region. Whereas the front feet were constantly kept in a more or less rhythmic motion the hind feet moved forward and upward toward the hind front feet and back in a slow sporadic tinges (not rhythmic). The side motion was almost entirely restricted to the hind or anterior part of the body. No rhythmic to the ~~same~~ <sup>same</sup> ~~similar~~ <sup>similar</sup> to hind feet motion. No noise uttered. Tail ~~remained~~<sup>was</sup> in mouth though heart was suspended by ~~two~~<sup>cut</sup> cord. The stomach contained remains of fruits and small amount of young leaf material.

Mar. 2 4 Km SW Numbur Camp Denburg River, Netherlands New Guinea 1200m.  
1 in 182 snares. Brought in by collector.  
Stomach contained remains of young leaf and other such green materials (young succulent vegetation)

Mar. 14 4 Km SW Numbur Camp Denburg R., Netherlands New Guinea 850m.  
1 in 27 steel traps. Brought in by collector.  
Taken in forest runway. Habitat low ridge with low heavy forest, open undergrowth, and leaf-littered forest floor. Stomach contained remains of young plants, leaves and such green materials. No fruits remains seen in stomach. Many round worms in stomach.

Mar. 24 1 in 27 steel traps. Brought in by collector.  
Stomach contained remains of green plant material.

Mar. 27 1 in 832 snares. Brought in by collector.  
Stomach contained green leaf remains. Many round worms in stomach.

Mar. 30 1 in 27 steel traps. Brought in by collector.  
Stomach contained green vegetable material. Many round worms in stomach.



## Dorcopsis

Apr. 3 4th. S.W. Bernard Camp, Hurling P., Netherlands New Guinea 850m.

1 in 27 stub traps. Brought in by collector.  
Stomach contains remains of green vegetation. Many  
round worms in stomach.

Apr. 4 2: (1<sup>juv</sup>) in 998 snare Brought in by collector.

In pouch was very small young (an adult). Measurement of  
pouch region as follows.

Posterior lge of pouch to vagina 110 mm.

Pouch opening - 30 long by 22 broad.

Size of pouch 115 long x 76 broad.

Anterior tit to anterior base of pouch 80 mm.

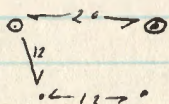


Diagram of tit. The 2 anterior tits worked

○ were both functional (lactating) however

there was only 1 young. This young was

attached to the smaller of the 2 posterior

tits. Smaller in size of tit and size of gland. It is  
most smaller at end of tit, that portion which  
is in the mouth of the young. ○ size of tip of tit

to which young was attached. ○ size of tit end to which  
there was no young attached. I believe that the

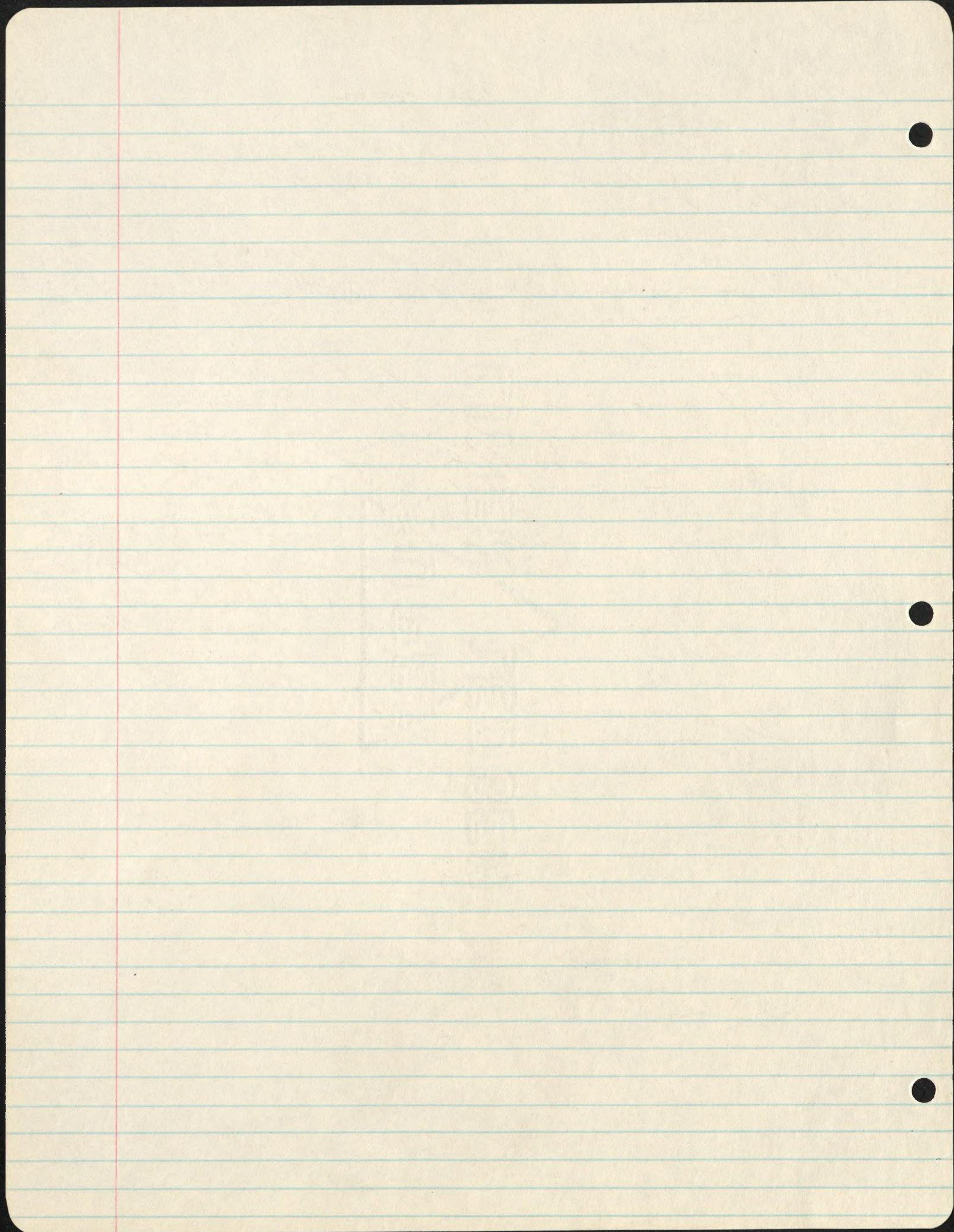
larger functional tit was the one to which  
the previous young was attached. At the

time of birth of the present young this  
tit was too large to attach to self to  
and so it used 1 of the other 3. Thus

a tit does not seem more than every other  
young giving it a chance to rest and return  
to non lactating state. If the young was able

to attach itself to the ~~small~~ <sup>smaller</sup> of the previous  
young I ~~cannot~~ <sup>cannot</sup> doubt whether the constituents  
of the milk would be correct for such an immature  
beast.







Wm B. Richardson  
1938

Echymipera  
~~Adaxox~~

June 13 Hollandia, Netherlands New Guinea.

One specimen, a large adult male, was sold to me this morning by one of our Santani Cookies for 25¢ providing I would return the carcass to them for food. They consider them good eating and from all <sup>external</sup> appearances I can't see why not, a nice light colored meat which cut easily with the scalpel. According to the Cookie this animal was caught or rather shot with his bow and arrow  $\frac{1}{2}$  mile north east of Hollandia in or near a small sago swamp which is situated at the mouth of a river (small).

The evening we went hunting in the same region but failed to see any although wild pig were common there.

June 17 Hollandia, Netherlands New Guinea.

A subadult female was taken from the traps set on the hill to the south east of Hollandia. Its exact habitat is unknown to me but the general habitat is that of a second growth forest beneath which there is both open space and littered brushy undergrowth.

The local names for this animal are  
Semoic - Totati  
Tekus - Malay  
Eme - Santani

June 18 Hollandia, Netherlands New Guinea.

My two collecting cookies pointed out the trap in which the yesterday's specimen was taken. It was at the edge of a litter heap beneath a second growth forest. Beneath the forest there is an open undergrowth and litter. The other littering soil is covered with a thin layer of humus and leaves.



June 24 Hollandia, Netherlands New Guinea  
The Dyak collectors killed one of these birds  
this morning. I presume that it was taken in  
the vicinity of the tree line which is about  
 $\frac{1}{2}$  mile south west of Hollandia.

June 29 Hollandia, Netherlands New Guinea  
Purchased an adult ♂ from a Papuan  
this morning .35¢. He said it was taken in  
the jungle, while falling trees. Another juvenile  
♂ was taken by my Papuan collectors while  
hunting in the jungle.

July 4 Hollandia, Netherlands New Guinea.  
Purchased (.35¢) another ♂ from the  
natives this evening. They (2 young boys) had shot  
it with a bow and arrow as evidence by the hole  
in the carcass and the bloody arrow. It was  
probably taken in the jungle in the immediate  
vicinity for it was local boys that brought it  
in and it was still in a warm relaxed  
condition. (Preserved on 5 July)

July 8 4 km. N.E. Dojo, Netherlands New Guinea  
The specimen preserved today was  
one of three brought in by a Papuan  
from Mr. Cheli at or near Dojo on Sertani  
Lake.

July 9 Hollandia, Netherlands New Guinea.  
One of the Ambones collector shot an  
adult ♀ with juvenis in pouch. I did not inquire  
as to the exact locality but presume it was  
taken within 2 km. of Hollandia.

July 12 4 km. N.E. Dojo, Netherlands New Guinea  
Two of the specimens #346 and #350  
were ones which were brought in to Hollandia  
by Mr. Cheli's coolies. They were taken at or near  
Dojo on Sertani Lake. They have been kept alive



Wm. S. Richardson  
1938  
1939

# Echymipera

for the past few days but due to improper food and handling they died.

July 12 Hollandia, Netherlands New Guinea.

A local native brought in a large adult male last night which he had taken with his bow and arrow in the jungle near Hollandia.

July 15 4 km NE Dojo, Netherlands New Guinea.

The three specimens prepared today were brought down by Mr. Chili yesterday. They were taken in the vicinity of his home near Sentani Lake.

July 16 Hollandia, Netherlands New Guinea.

The Dyak shot a ♀ with its young in its pouch. It was taken <sup>at night</sup> while hunting with flood light in the jungle south of Hollandia.

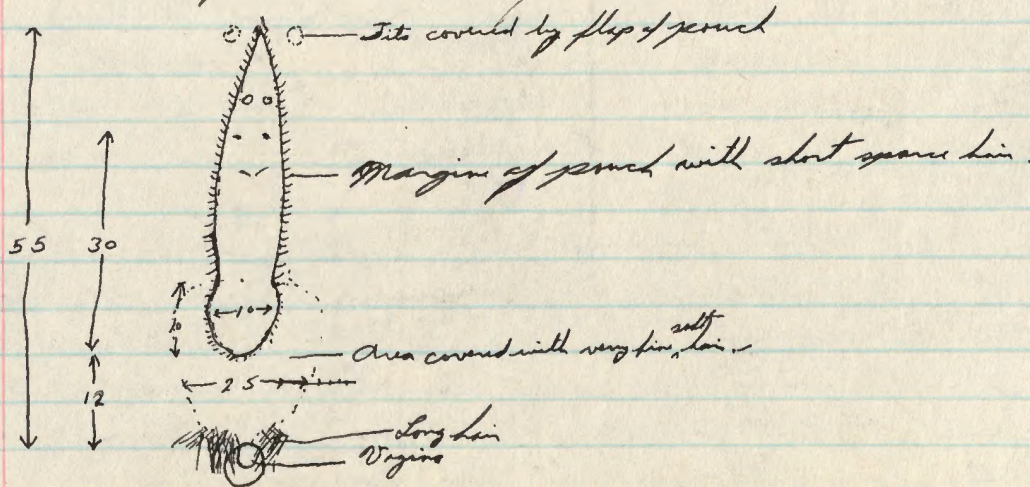
Feb. 18 6 km SW Bernhard Camp Idenburg R., Netherlands New Guinea, 1200m.

1 in 23 snares. Brought in by collector. Stomach contained remains of many insects and other invertebrate life. Noted such things as centipedes, arachnids, beetles, grasshoppers, ants, eggs of different insects (probably ants), etc.

Feb. 20

1 in 74 snares. Brought in by collector.

Following information is from fresh specimen





This pouch is remarkably long extending forward to with 1 cm of front legs. From tip of head it measures 180 mm. The width is fairly constant throughout measuring between 50 and 60 mm. The snare which caught this beast caught it mid way between fore and hind legs; 170 mm from <sup>tip of snare</sup>. It, that is the snare, also caught the young which was in pouch mid way between fore and hind legs. (See alcoholic specimen). This would indicate that young were carried in pouch with head toward posterior of adult. It is also interest to note the well formed pouch in the jaw. This is not apparent in juveniles of the related genera Peroryctes

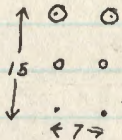
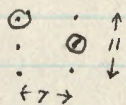


Diagram of tits. The forward <sup>equally</sup> enlarged and lactating. The middle pair small not lactating. The posterior pair very very small. They measure respectively 27 mm., 6 mm., 1 mm.

Feb. 28 4 km. SW Bernhard Camp Idenburg R. Netherlands New Guinea 1200 m.  
1 in 182 snare. Brought in by collector.  
Stomach contained insect remains.

Mar. 9 4 km. SW Bernhard Camp Idenburg R. Netherlands New Guinea 8500 m.  
3 ~~in~~ (200) in 141 snare. Brought in by collectors. There were 2 young in pouch unattached to tits. Measurements of pouch. Pouch slit 30 mm.  
Posterior lip of pouch to vagina 12 mm. Pouch 100 x 45 mm



Only 2 individuals of the 3 pair lactating. Lactating tits measure 20 mm. Non lactating measure 2 mm. From posterior pair of tits to tip of pouch is 30 mm. The lack of tail in adult curious. The 2 young, however, both have apparently normal tails (see alcoholic).



Calycomys

On examination of about 1000 remaining caudal vertebrae  
I believe that the absence of the tail is <sup>partly</sup> an abnormality.  
~~due to~~

Mar. 14 6 Km. SW Bumbad Camp Idenburg R. Netherlands New Guinea 1200 m.  
1 in 231 snags. Brought in by collectors.

Mar. 15 4 Km. SW Bumbad Camp Idenburg R. Netherlands New Guinea 850 m.  
1 in 209 rat traps Brought in by collector. Jaw. Badly  
mutilated by ants.

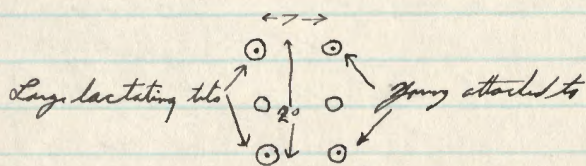
Mar. 16 <sup>(2 juv.)</sup>  
3 in 508 snags. Brought in by collectors  
The anterior 2 of the 6 (3 pairs) of the are lactating.  
Vagina & tip of pouch 12 mm. Vagina & pouch tips 40 mm  
Length of tit row is 12 mm. Length of pouch opening  
is 40 mm. Stomach contained numerous small insects

Mar. 18 2 (1 juv.) in 573 snags. The interesting thing  
here is the relatively small size of this breeding  
animal. Apparently these rodents do not reach  
a size when growth ceases but rather there is  
a continued growth throughout their life time. There  
was only 1 of the 6 mammary glands lactating, one of  
the anterior pair. Stomach contained remains  
of many small insects.

Mar. 21 <sup>(2 juv.)</sup> in 670 snags - Brought in by collectors  
The adult ♂ # 7703 is the largest I have yet  
taken in this camp. In comparing it with the  
♀ at hand I can see no difference except in  
size and the yellow belly and <sup>supra</sup>hairs to the dorsal  
hair. This latter coloration, that is the yellowing of  
the hair might well be stain rather than a  
natural color. The ♂ certainly is much larger  
and more massive proportion which seemingly indicates  
a growth throughout life. In the pouch of the  
♀ # 7698 are two juveniles # 7699 + # 7700. One  
still remain alive. The following are notes on its  
activity. - While attached to tit is inactive except  
for rhythmic movement of a stomach muscle which  
gives a quick contracting about every 2 to 3 sec. There  
is no sense of equilibrium nor apparent effort to



large positions. When disturbed with fingers it makes a very slow crawling motion with front feet. At present I am watching the little heart and very occasionally in addition to the stomach contraction there is a slight movement of shoulders and head, seemingly an effort to obtain milk from the tit. On being removed from the tit and placed near the vagina the heart lies inactive on its side except for a more rapid contraction of the stomach walls. No effort whatsoever is being made to crawl. On being reattached still makes no effort to crawl. When placed in pouch still inactive. Tit placed to mouth no effort made to reattach itself.



This diagram of the teats is interesting in that of the 3 pair 2 the ~~marked~~ labeled large lactating

are in size 5 or more times as large as the others which are approximately the same in size. These 2 large lactating tits are far too large for the young to attach themselves to. They measure 3.5 mm. though at the tip behind the muzzle of the young have a depth only of 3.7 mm. From this I would conclude that the young on birth have a choice of 4 tits rather than six or 8 which to attach themselves and these 4 being of approximately the same size and the same functioning state. On attachment however these <sup>4</sup> only continue development the others becoming small and non-functional. The 2 large lactating tits here are probably those that were used by the two previous young and have not as yet returned to the size and shape of non-lactating. They will probably do so with the



## Echymipera

development of the other glands and this does. If these large tit, or rather the post functional ones, are present at time of birth as is the case here it will ~~be~~ function as a rotation of ~~the~~ mammary activity.

If young are born at the same time the last litter ~~was~~ was ~~it~~ would give the glands a rest period ~~at~~ without delaying birth periods.

Length of pouch opening 40 mm.

Lip of pouch to vagina 10 mm

Lip of pouch to posterior part of tit 28 mm.

Pouch dimensions 120 x 62 mm.

Stomach of both adult individuals contained insect remains and seeds of *Pandanus* and the ♂ had seeds of unidentified fruit.

Mar. 22 4 Km. SW Dumbard Camp, Dumbard R., Netherlands New Guinea 850 m.

3 (♂ juv.) in 742 snare. Taken on a low ridge with rather open forest and moderately heavy undergrowth. The forest floor had a leaf litter. The most interesting thing is that the snare was set beneath a fruiting *Pandanus* many of the fruits of which had fallen and had in part been eaten by some animals. It is the same *Pandanus* (sp.) the seeds of which have been found in the stomach of other birds. The pouch contained 2 young (*androschalis*).

Pouch measurements

Posterior lip of pouch to vagina + 12 mm.

Pouch opening 40 mm.

Posterior lip of pouch to posterior tit 32 mm.

Length of tit row 14 mm.

Breadth of tit row 5 mm.

Size of pouch 90 x 45 mm.

Mar. 24

1 in 812 snare. Brought in by collector. Had only, remainder of bait eaten while in the snare.



Mar. 29 4 Km SW Bernhard Camp Idenburg R., Netherlands New Guinea 850m.

2 in 207 rat traps, + 845 snare - Brought in by collectors. Stomach of large ♂ contained remains of insects and *Pandanus* seeds.

1 in 876 snare. Brought in by collectors.

This bat seems to me to be different than the species taken yesterday.

It is gray in color particularly dorsally and laterally; it has a large narrow ear, brown eye patch, large tubercula sole pad on hind feet measuring 23 x 8 mm.

The absence of the tail is an abnormality. A very short stub can be felt under the skin.

Mar. 31 1 in 931 snare Brought in by collectors. Taken on low ridge above the flood plain to the NW of camp. Stomach contained insect remains and *Pandanus* fruit

Apr. 1 2 in 987 snare. Brought in by collectors.

Apr. 7 2 in 1075 snare. Brought in by collectors.

Apr. 10 Bernhard Camp Idenburg R., Netherlands New Guinea 80m.

1 in 346 traps. Brought in by collectors.

Apr. 15 1 in 253 snare

Taken on upper flood plain. Stomach contained insect remains, insect (at) eggs, and broken membranes of some reptile egg.

Apr. 16 4 in 27 steel traps + 328 snare. # 7863

Taken on flood plain, the other 3 on the lower mountain slope. The pairs of # 7861 and # 7863 are similar being short with <sup>ventral</sup> ~~ventral~~ tip of less than 1/3 the entire length. The skull had 6 teeth of equal size, non lactating. The anterior end of the pouch had a small (7mm) opening.

Apr. 19 1 in 418 snare. Brought in by collector.

Taken on lower mountain slope.

Apr. 20 2 in 463 snare. Brought in by collectors

Larger species taken on flood plain. Smaller



Echymisera

specimens taken on lower mountain slopes above flood plain.

Apr. 21 Bertrand Camp, Ghering R., Netherlands New Guinea 75 m.  
2 in 483 snails. Brought in by collectors.

The specimen (skull only) had roughened sole pads.

Apr. 22 4 in 520 snails, + 257 rat tags. Brought in by collectors

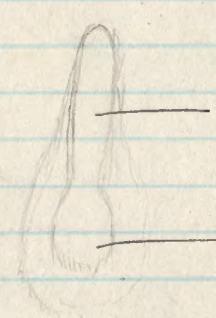
#7889, #7893, #7894 taken on lower mountain slopes above flood plain. #7890 taken on upper flood plain.

Apr. 23 3 in 570 snails. Brought in by collectors.

Apr. 25 3, in 602 snails Brought in by collectors.

Taken on lower mountain slopes ~~at~~ above flood plain. The 2 juv. are in alcohol. Pouch measurements as follows —

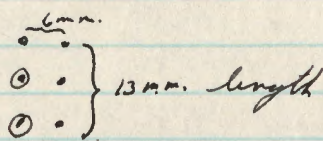
- Vagina & proctum tip 10 mm.
- Length of opening 46
- Vagina & proctum tips tot 34
- Length of pouch 112
- Width of pouch 60



— This part ~~remains~~ opens and closes with spreading of legs.

— The remain open. As legs are closed together a tight leg contract to the pouch is formed, the thickened surrounding wall forming legs.

Diagram of pouch opening



Of the 6 tits 2 were functional. The others though enlarged apparently not lactating. Non lactating ones of similar size.

Young not attached to tits

Apr. 24 2 in 602 snails Brought in by collectors.

Apr. 27 2 in 652 " " " "



Apr. 29 Bertrand Camp Denning R., Matanuska Flw Basin 50-75m.

3 (1 juv.) in snows. Brought in by collectors. Taken on small strip of land bordering the mouth of the stream when it enters into the lagoon. This area is above the present flood water which completely surrounds it. Habitat floor of the forested flood plain. 6 Mammary glands all of apparently the same size except one to which young was attached this being about  $\frac{1}{2}$  grain ~~in~~ as long, but the same thickness.

Apr 30 1 in 799 snows Brought in by collectors  
Taken on lower mountain slope.

May 1 5 (2 juv.) in 850 snows. Brought in by collectors. #7983 + #7984 taken on lower mountain slope. #7987 taken on forested edge of lagoon. The flooded conditions at the present time leaves small strips of land exposed and it was on one of these that the animal was taken.

May 2 2 (1 juv.) in 893 snows. Brought in by collectors from lower flood plain. Same locality as that taken on May 1.

May 3 3 (2 juv.) in 895 snows. Brought in by collectors from snows cut along small strip of exposed land (above flood water) <sup>at mouth of</sup> stream entering lagoon.

May 4 1 shot last evening by collecting boy. It was running about the leaf littered floor of the exposed (above present flood) forested land near the lagoon. Habitat - primary forest, moderately thick undergrowth, moist leaf littered floor. There was 1 young seen in pouch (not saved)

May 5 1 brought in from 986 snows. Taken on lagoon banks.

May 6 2 in 1055 snows. Alcoholic specimen from lagoon banks. Skull only from east side of Denning River.

May 7 4 (1 juv.) in 1055 snows. Brought in by collectors. #8031 taken on lagoon banks. #8033 taken on the east



Wm B. Richardson  
1959

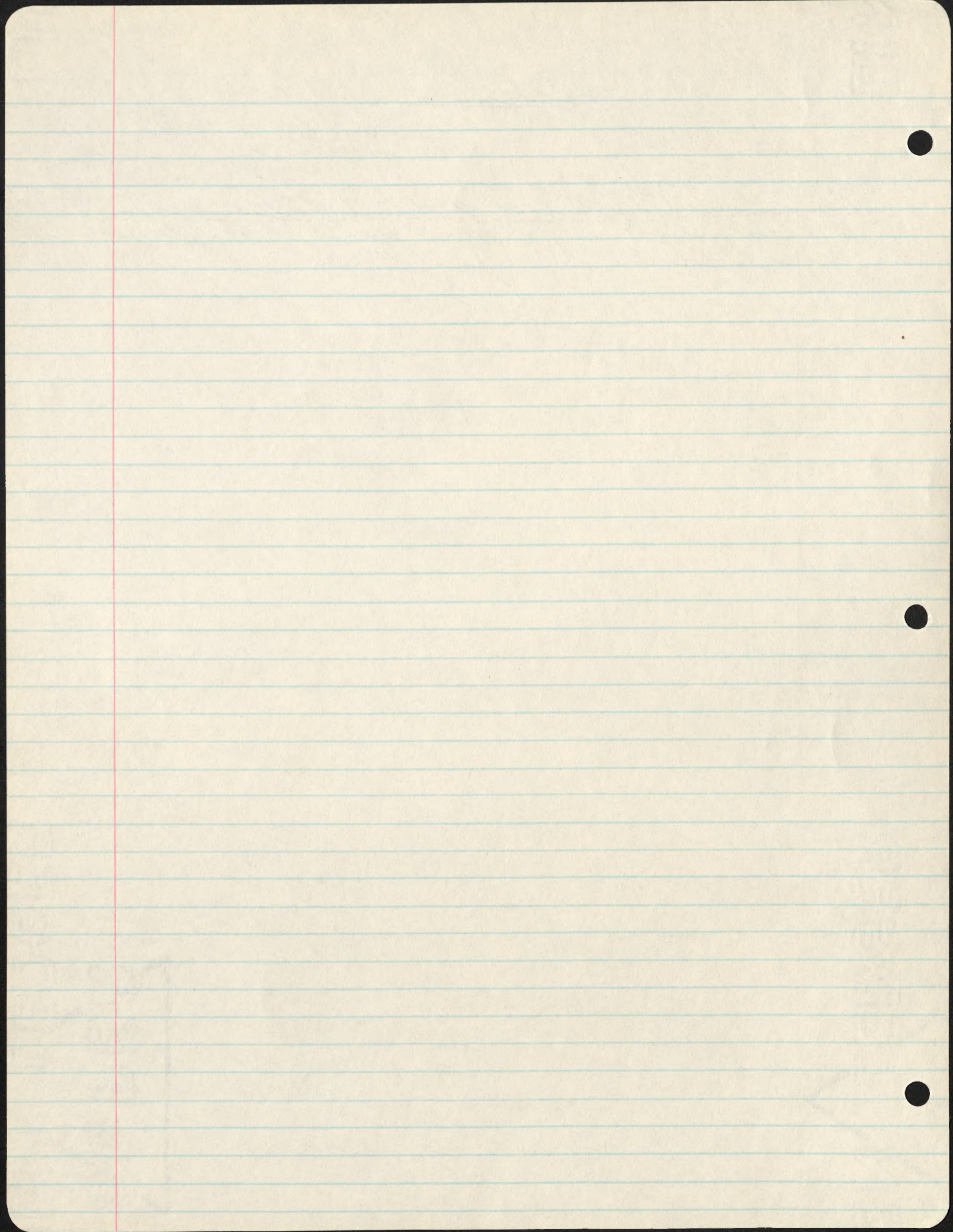
6

Echymipera

side of the river. # 8035 and 8036 taken on lower  
mountain slopes SW of camp.

May 8 Bernard Camp, Humber R., Netherlands New Guinea 5000.  
3 (2 Juv.) in 1955 same (Sounded) Brought  
in by collector from across the river.







25th B. Richardson  
1938

## Emballonura

- July 14 Hollandia, Netherlands New Guinea. sea level.  
One individual was brought in yesterday evening by a local native. I was unable to find out from him the habitat or exact locality.
- Feb 13 6 km SW Benard Camp Shabang R. Netherlands New Guinea 1200 m.  
One shot yesterday evening. This bat was flying between 10 and 20 feet ~~at~~ above the ground, flying across the the camp clearing and at the same time feeding. It is apparently a bat which feeds in above the under growth and below or in the second story vegetation. One interesting thing is that they generally fly about in pairs, and often in 3's or 4's. They have a rather slow laborious flight. There are many of this species, judging ~~it~~ from flight activities, seen each evening. I would estimate that there are between 40 and 50 seen each evening.
- Feb. 15 1 shot yesterday evening which it was foraging about the leafy fringe of of the second story about 25 ft. above the ground.
- Feb. 20 1 shot by Rand. Shot about 6 to 40. Flying over camp clearing some 20 ft above the ground. Moderately slow flight. I believe that both species of this genus feed in the forest above the undergrowth and below the second story vegetation. They are shot about camp clearing only as it offers a suitable place in which to find them after they are hit.
- Feb. 21 1 shot by myself. Flying about 20 ft above ground across a small opening of camp clearing.
- Feb 24 2 shot by Rand. Flying low between wooded points of either side of the camp clearing. N. emb.



Mar. 24 ~~4 km~~ SW Bernhard Camp Idenburg R. Netherlands New Guinea 850 m.

2 individuals shot yesterday evening. They were a number of the small bat flying some 40 to 50 ft. above the ground in the second growth forest at the upper edge of the flood plain. They were feeding in small openings and about the crowns of the second growth forest. There were perhaps 20 to 30 individuals seen last evening.

Mar. 29 2 shot yesterday evening. Same place and same circumstances as those taken on Mar. 24.

Mar. 31 1 shot yesterday evening. Shot in same place as above. These bats have a moderately rapid flitting sort of a flight with very quick breaks. They feed in <sup>small</sup> openings between the crowns of trees of the upper flood plain.

Apr. 3 1 shot yesterday evening. Flying high about crowns of the upper flood plain trees.

Apr. 12 Bernhard Camp Idenburg R. Netherlands New Guinea 75 m.

3 individuals shot yesterday afternoon. They were hanging at rest beneath a large leaf (12 in across) some 12 ft above the ground. It was not dark beneath but rather the thin, <sup>translucent</sup> leaf gave them little shelter except from rain. When I first saw them they were huddled together, alert watching our movements. They made no attempt to fly away.

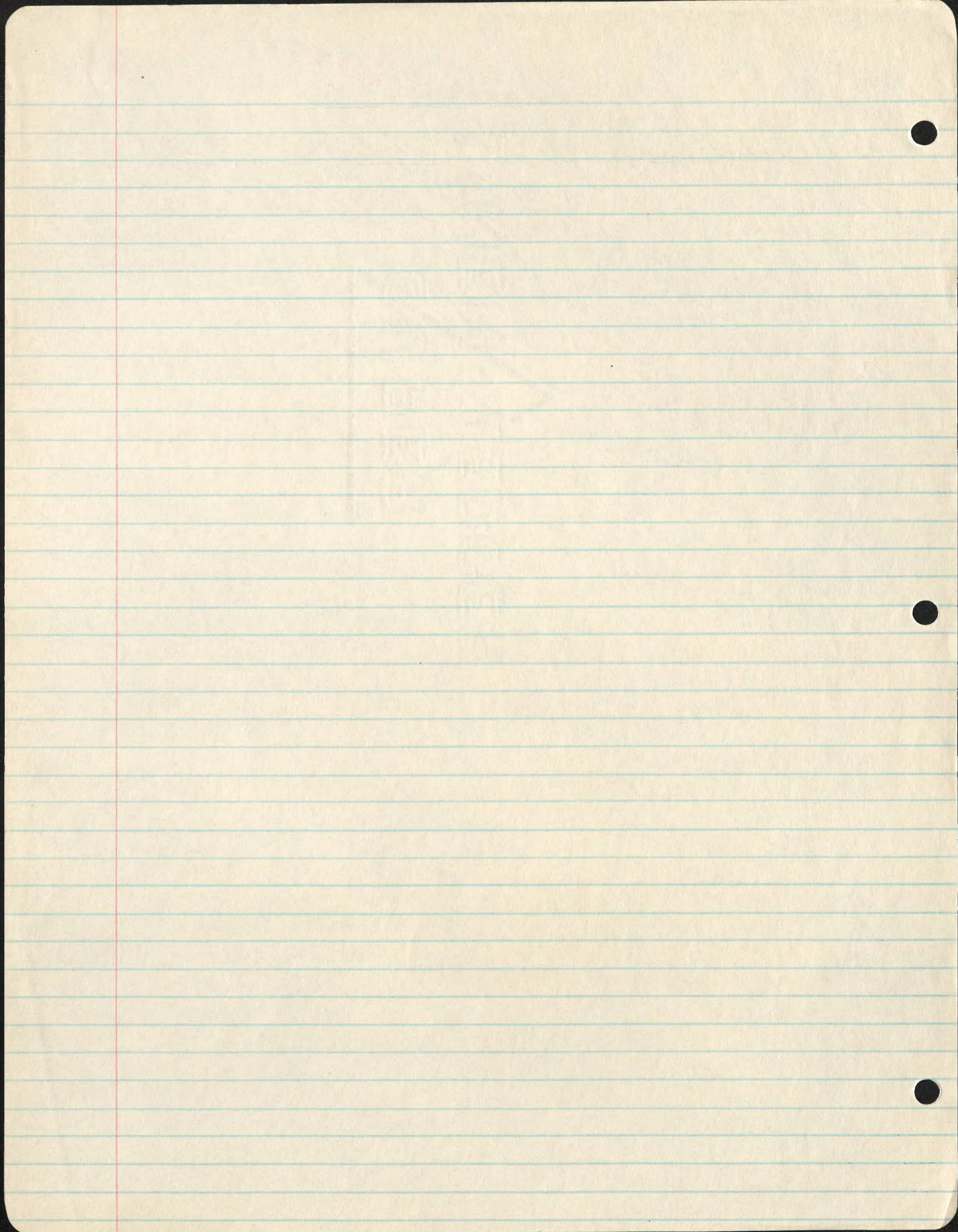
Apr. 18 4 individuals shot this afternoon. They were hanging beneath a fan palm leaf. When first seen they were flying about in a small (15 ft) arch through the filices of the <sup>upper</sup> lower second stage vegetation. After about 3 or 4 minutes flight they came to rest beneath a palm leaf some 20 ft above the ground. They hung <sup>individually</sup> some 2 or 3 inches apart. The 2 ♀ each contained a young



Emballonura

- Apr. 20 Bernhard Camps Denburg R., Netherlands New Guinea 75m.  
4 shot from beneath a leaf of a fan palm.  
It was on the upper flood plain in mixed primary and secondary forest. The leaf was some 15 ft above the ground. Two adults were huddled together and some 30 or 4 inches away the other adult hung. They were awake and watching our activities but made no attempt to fly away.
- Apr. 22 2 shot by my collecting bag this afternoon.  
According to ~~him~~ they were hanging <sup>up</sup> beneath a small leaf of one of the upper flood plain trees. <sup>the morning</sup>
- Apr. 23 2 shot by Rudy. He said they were flying about in the forest.
- Apr. 27 1 shot. Flying high about <sup>the</sup> edge of lagoon. It was feeding with many fast beaks; an erratic flight. There.
- Apr. 28 11 shot. They were hanging up, in 3 different groups, under large leaves. There were 2 groups of 3, and 1 of 5 individuals. One group of three had 2 ♂ and 1 ♀ adult. One group had 1 ♂, 2 ♀ young. The other group had ? They were hanging up some 5 to 7 feet above the flood water.
- Apr. 29 2 shot this morning from under a large fern leaf in the inundated forested border of the lagoon. They were ~~seen~~ hanging up some 4 ft. above the water.
- May 1 5 shot this morning by collecting bag.
- May 3 1 shot by collecting bag.
- May 4 1 shot yesterday evening. It was flying some 30 ft above the water along the forested edge of the lagoon.
- May 7 9 shot. One shot yesterday evening while flying along tree tops of stream side. The others were found by collector hanging up beneath leaves in the forest in groups 4, 2, 1, 1.
- May 8 2 shot yesterday evening flying about forested lagoon border.







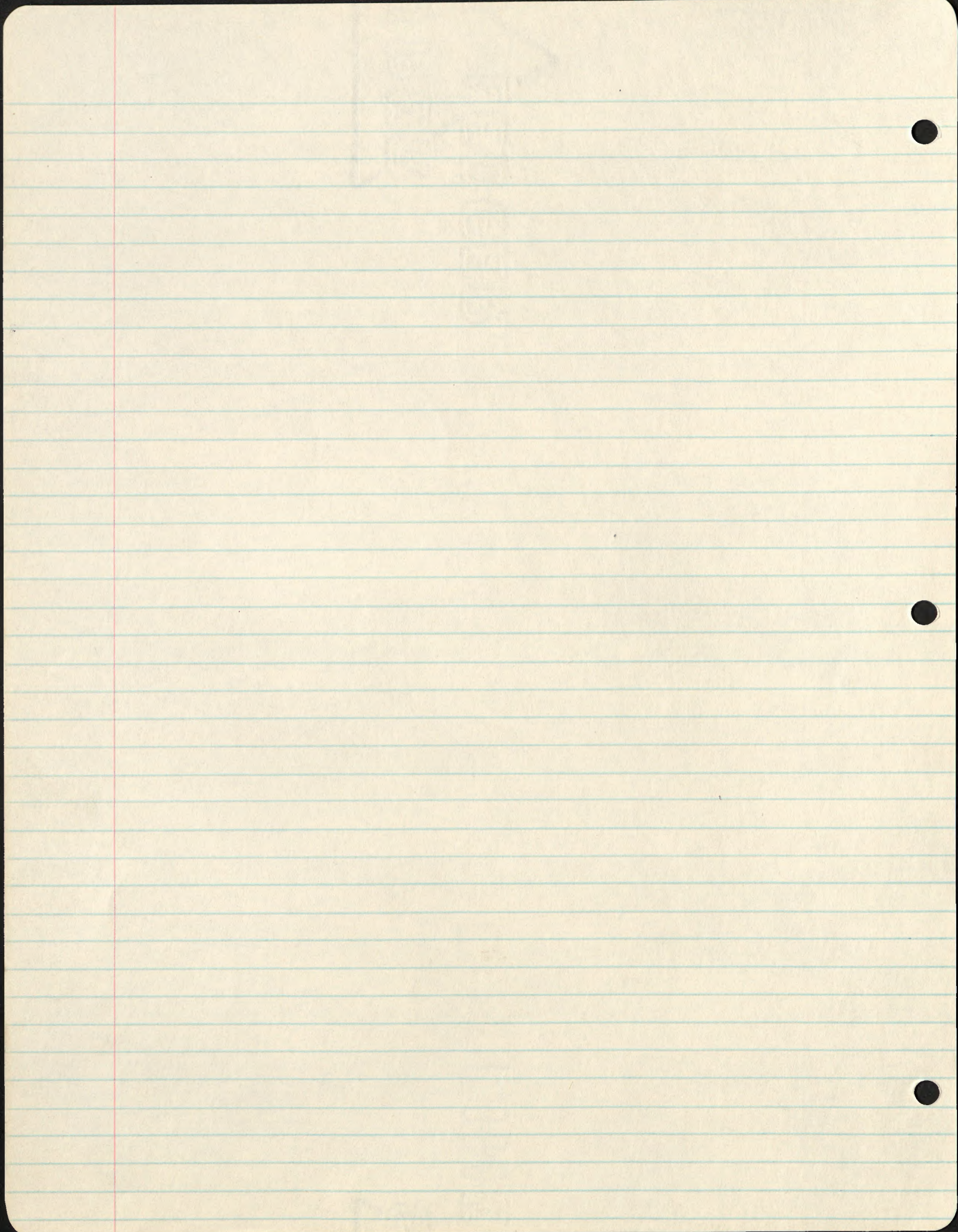
2573 Richardson  
1939

Eptesicus ~~paxillia~~

Mar. 11 4 Km. SW Bernhard Camp Menting R., Netherlands New Guinea 850 m.

1 caught yesterday evening by convict. It was taken while flying about camp.



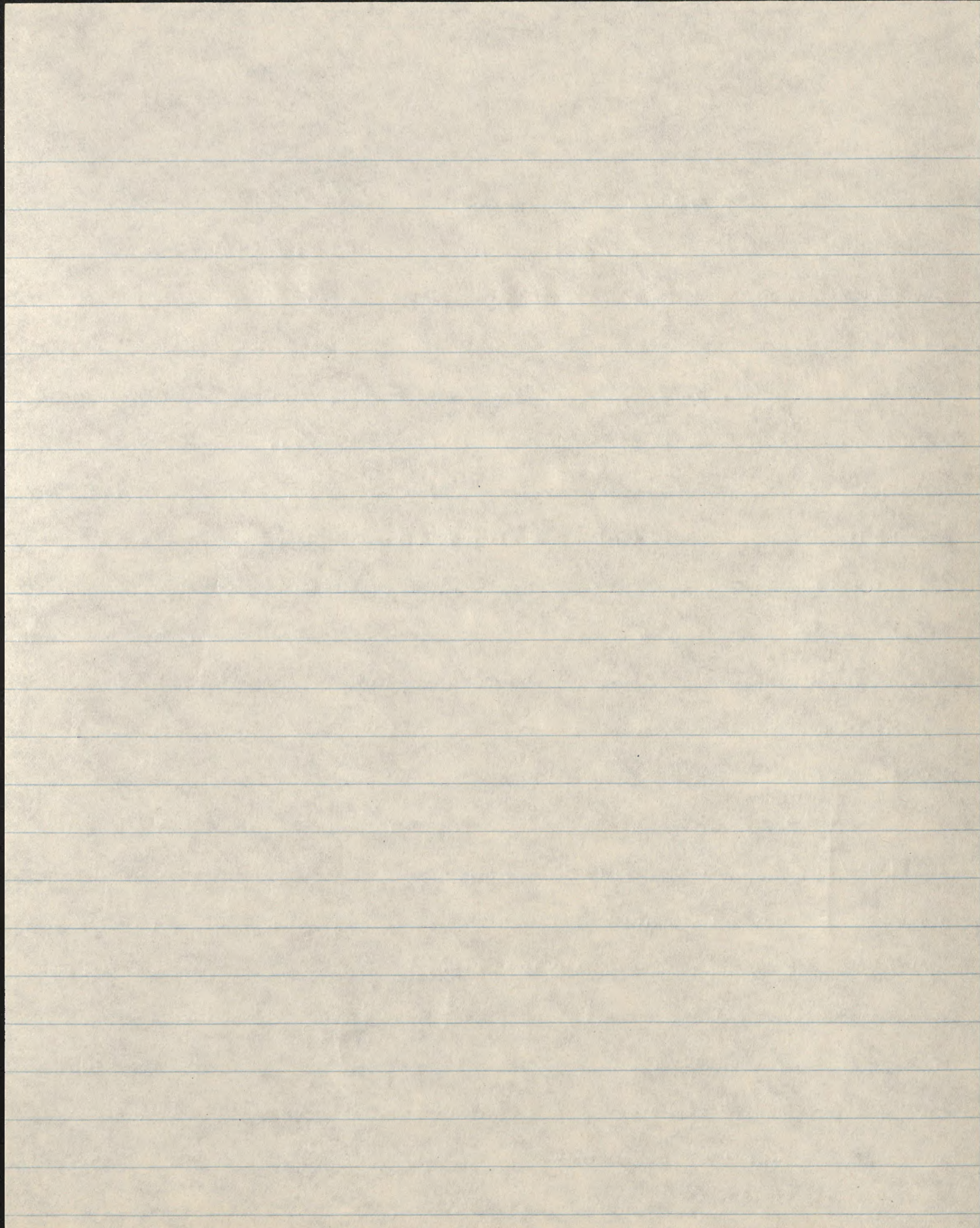




1

Endromia candata - While at Lake  
Habbema some of the small snowsquirrels were  
brought in. The habitat was that of the  
subalpine forest with its Libocedrus  
trees, clumps of Pododendron and other  
shrubs, and its grassy-moss floor. These  
animals were taken from their nests one  
from a moss clump; two from  
cavities in the Libocedrus trees;  
and the other point of origin was  
unknown. The nest for which all  
specimens were taken was constructed in an old  
moss clump attached to the side of a dead  
Libocedrus tree about nine feet above the  
ground. This moss clump, about eighteen  
inches in diameter was held <sup>to the tree</sup> in a compact  
mass by the numerous dead and dying  
plants which had established themselves  
in the structure and ranged about the tree.  
The nest chamber (3x4 inches) was constructed  
in the moss clump and filled with dry  
filices of the same material. The entrance was



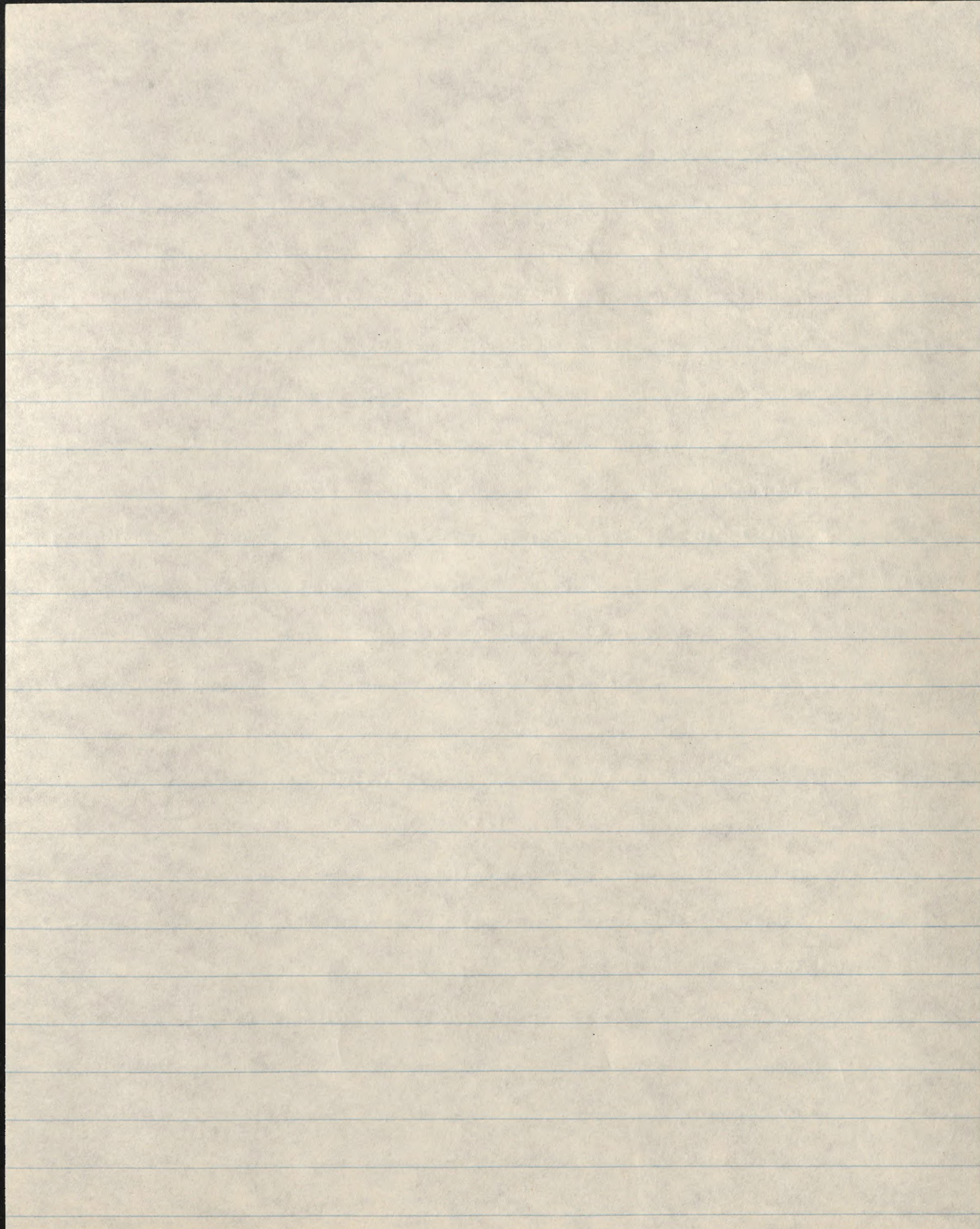




one inch in diameter leading through the moss  
 logs to the top of the nest. There was no  
 dung or refuse about the nest. Two individuals  
 from the camp were kept alive in ~~suitable~~  
 box cages for a period of one to two days. The  
 following information was made from these  
 caged animals.

Locomotion - They were very agile climbing  
 about with an ease that surpassed that  
 of either Phalanger maculatus or Pseudocheirus  
As compared with Pseudocheirus  
 the digits of the front and  
 hind feet have a larger terminal pad and  
 a smaller claw. The front feet are not as  
 well adapted for grasping, that is the first  
 two fingers are less opposable to the other three;  
 the grasping ability of the hind feet is  
 similar. The tail is used but little in  
 climbing and then as a brace or balance  
 when going from limb to limb. It is seldom  
 used prehensilely for this animal depended  
 upon the grasp of the feet in climbing on







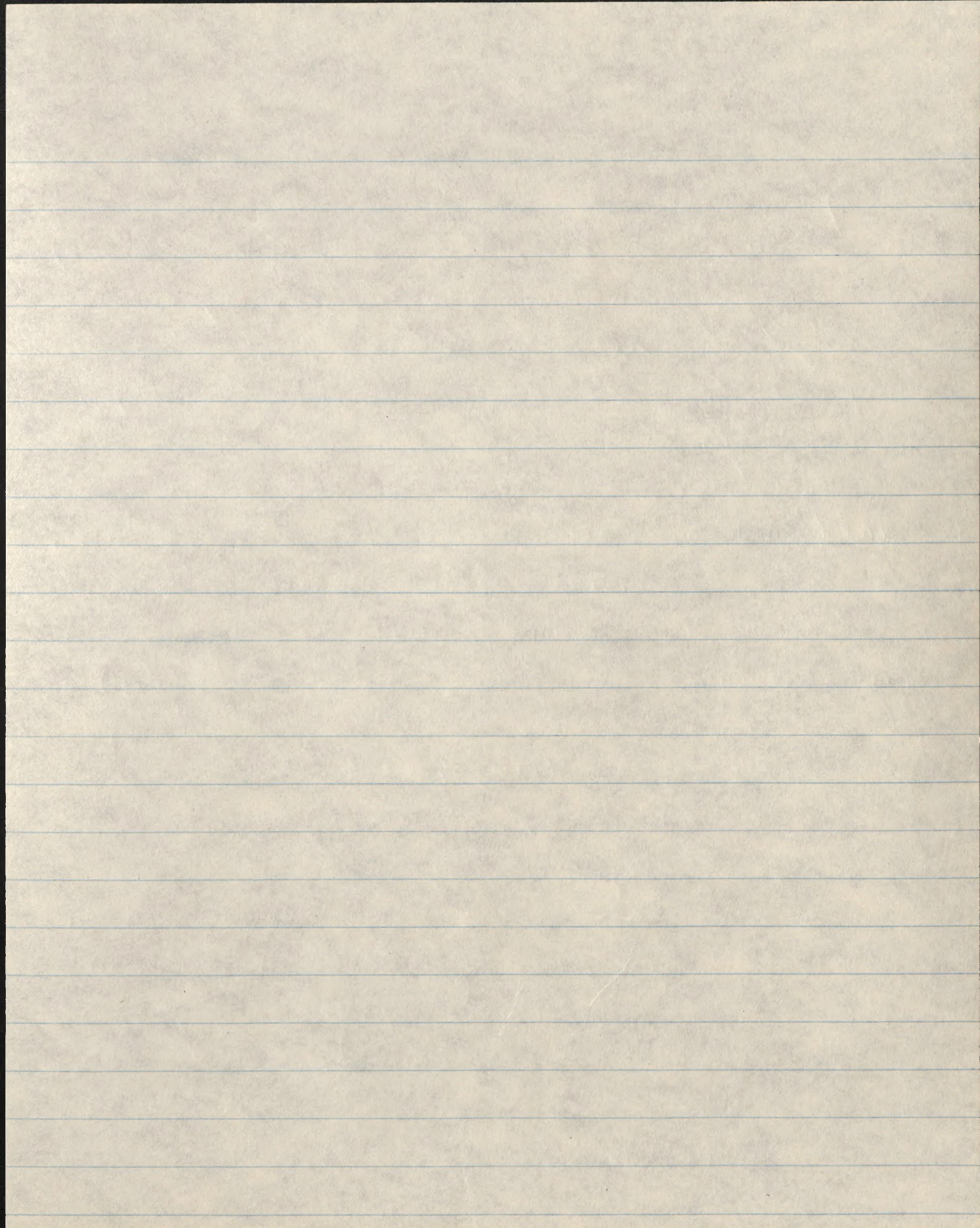
descending a limb.

Voice - I did not hear them utter any sound except an occasional forcing of air out through the nostrils which produced a hissing sound. This occurred only when they were excited.

Food - The fruit of winter grass (*Sauzetia*) was the only food these captives would eat. The small blue berries were picked up between their front paws and squirrel-like sitting up to the fleshy parts discarding the seeds and skin.

Two individuals were taken in traps at the 3600 m camp. The traps were set in small runways at the edge of the subalpine vegetation where the uneven terrain of the hill slope was vegetated with bush clumps, scattered *Salix* trees, and a broken ground cover of moss.







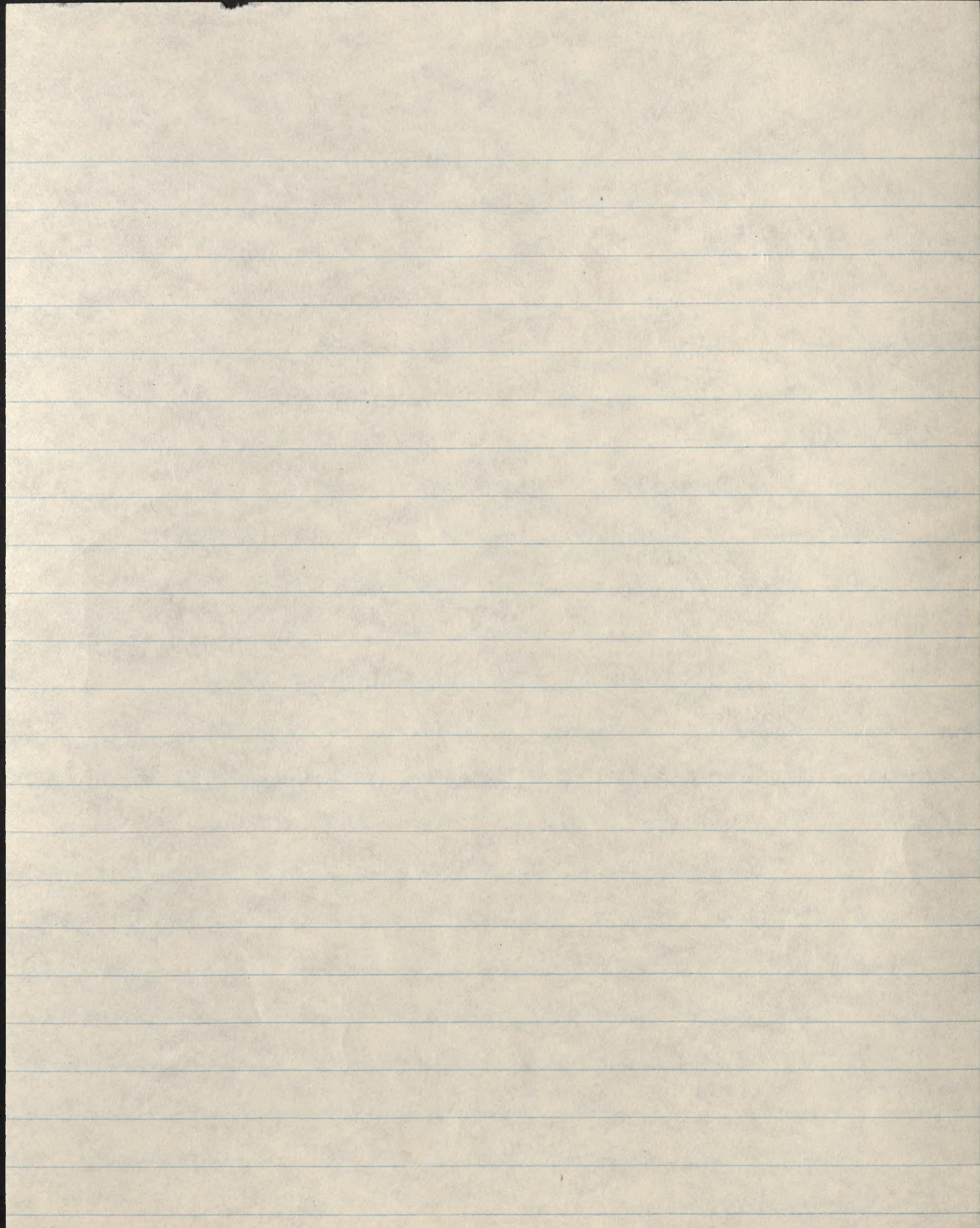
At the 3800 m camp ~~one~~ <sup>one</sup> individuals  
was taken in a trap ~~for~~ <sup>for</sup> 150 m above camp  
on a hill slope at the upper edge of a strip of  
~~strip of~~ ~~sub~~ ~~dry~~ ~~forest.~~ ~~which~~ ~~was~~ ~~not~~ ~~noted~~

The trap was set beneath a Exoporum  
tree which ~~was~~ during this season was fruiting.  
It is quite possible that it had come there  
to feed. The other animal was taken  
in a trap which

Three individuals were taken from the  
2800 m camp. One brought in by natives. Its  
singed condition would indicate that it had been  
burned out of a tree. Another was brought in  
by a collector. The third it was taken in a  
trap set on the littered sunny floor of the  
sunny forest. As the forest was a type in that  
the natives had killed many of the trees by ring barking.

~~different~~  
Sixteen individuals were brought in by  
natives to the Bala River camp. One of these was  
still worn when brought in indicating that  
it had been taken somewhere in the



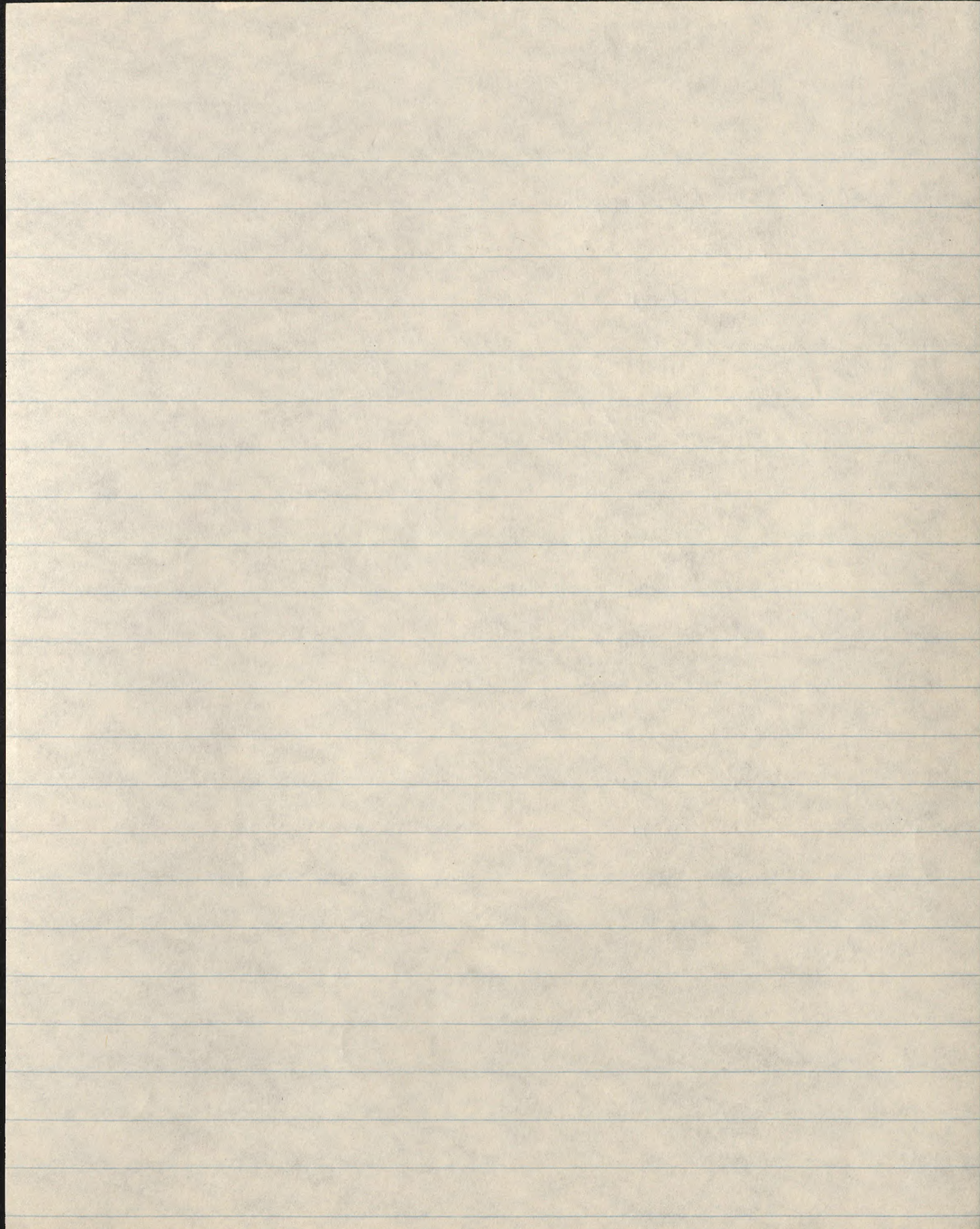




immediate vicinity.

One individual was taken <sup>at</sup> the  
 Balin River camp by a Dyak <sup>who captured it alive</sup> with the  
 aid of a native. According to the Dyak  
 story it was taken from a hole in one of the  
 fig trees <sup>(Ficus)</sup> which border the river. These  
 trees were in fruit at this time. The following  
 notes were made while watching <sup>the</sup> animal.  
 The defense attitude was that of raising up on  
 the hind feet, fore feet in front, and the  
 mouth open. The tail was carried while  
 running but the floor of the cage was a  
 large <sup>dense</sup> coil (1 1/2 loops) the base of the coil being  
 close to the body. When climbing about the  
 limbs with which the cage was provided, the  
 tail was held at behind with a slight  
 downward curl. It was used as a brace  
 with the objects with which it came  
 in contact rather than as a prehensile organ.  
 It was a very active animal, nearly alert to  
 noise and movement. It died within 24  
 hours of captivity.







Eudromicia candata. - While at Lake Habbema four of these small marsupials were brought in. The habitat was that of the sub-alpine forest with its Libocedrus trees, clumps of Rhododendron and other shrubs, and its grassy-mossy floor. These animals were taken from their nests or from a moss clump; two from cavities in the Libocedrus trees; and the other's point of origin was unknown. The nest from which the first was taken was constructed in an old moss clump attached to the side of a dead Libocedrus tree about nine feet above the ground. This moss clump, about eighteen inches in diameter, was held to the tree in a compact mass by the numerous dead and dying plants which had established themselves in the structure and were wrapped about the tree. The nest chamber (3x4 inches) was constructed in the moss clump and filled with dry fibers of the same material. The entrance was one inch in diameter, leading through the top of the moss clump to the top of the nest. There was no dung or refuse about the nest. Two individuals from this clump were kept alive in box cages for a period of one to two days. The following information was obtained from these caged animals:

Locomotion. - They were very agile, climbing about with an ease that surpassed that of either Phalanger maculatus or Pseudochurus



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. As compared with Pseudochirus the digits of the front and hind feet have a larger terminal pad and a smaller claw; the front feet are not as well adapted for grasping, that is, the first two fingers are less opposable to the other three; the grasping ability of the hind feet is similar. The tail is used but little in climbing and then as a brace or balance when going from limb to limb. It is seldom used prehensily, for this animal depended on the grasp of the feet in climbing or descending a limb.

Voice. - I did not hear them utter any sound except an occasional forcing of air through the nostrils, which produced a hissing sound. This occurred only when they were excited.

Food. - The fruit of wintergreen (Gaulthina) was the only food these captives would eat. The small blue berries were picked up between their front paws and squirrel-like, sitting up, they ate the fleshy parts, discarding the seeds and skin.

Two individuals were taken in traps at the 3600 m. camp. The traps were set in small runways at the edge of the sub-alpine vegetation, where the uneven terrain of the hill slope was vegetated with bush clumps, scattered Libocedrus trees, and a broken ground cover of moss.

2



the signs of

was compared with Neobornia

the front and hind feet were a little flattened and the latter with

the front feet are only as well adapted for grasping, and the hind

feet two fingers and toes, and the hind feet are a little flattened

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At the 3800 m. camp one individual was taken in a trap from 150 m. above camp on a hill slope at the upper edge of a strip of sub-alpine forest. The trap was set beneath a Coprosma bush, which, during this season, was fruiting. It is quite possible that it had come there to feed.

Three individuals were taken from the 2800 m. camp. One brought in by natives. Its singed condition would indicate that it had been burned out of a tree. Another was brought in by a collector. The third was taken in a trap set on the littered mossy floor of the mossy forest. Here the forest was atypical in that the natives had killed many of the trees by ring-barking.

Sixteen individuals were brought in by natives to the Bele River camp. One of these was still warm when brought in, indicating that it had been taken somewhere in the immediate vicinity.

One individual was taken at the Balim River camp by a Dyak who captured it alive with the aid of a native. According to the Dyak's story, it was taken from a hole in one of the big trees (Ficus) which border the river. These trees were in fruit at this time.



At the 2800 m. camp the following day (1951) I

the m. above camp on a hill slope at the upper end of a field of

and a large forest. The first was seen between a large bush, which

during this season, was (1951). It is quite possible that it had

some birds to feed.

These individuals were taken from the 2800 m. camp. One was

in a large. The higher condition was a large that it had been

turned out of a tree. Another was brought in by a collector. The

tail was taken in a trap set on the littered mossy floor of the mossy

forest. Here the forest was typical in that the natives had

many of the trees of this

These individuals were brought in by natives to the camp

camp. One of these was with some other in the morning

and had been taken somewhere in the immediate vicinity.

One individual was taken at the 2800 m. camp by a native who

belonged to the same village. According to the native

2001, it was taken from a hole in the side of a tree (1951) which

bordered the river. These trees were in fruit at this time.



The following notes were made while watching this live animal:

The defense attitude was that of rising up on the hind feet, the fore feet in front and the mouth open. The tail was carried while running about the floor of the cage in a large dorsal coil ( $1\frac{1}{2}$  ) the base of the coil being close to the body. When climbing about the ~~hind~~ limbs with which the cage was provided, the tail was held ~~at~~ out behind with a slight downward curl. It was used as a brace with the objects with which it came in contact rather than as a prehensile organ. It was a very active animal, keenly alert to noise and movement. It died within 24 hours in captivity.







## Eudromicia

Aug. 4 Lake Habbema, Netherlands New Guinea 3225 m.

① Yesterday afternoon a Dyak brought in a living individual of this genus.

Locomotion: This animal is very agile climbing about with an ease that surpasses *Phalanger* or *Pseudochinus*. The front feet although apparently not so perfectly adapted for grasping as *Pseudochinus*. They do however have enlarged terminal <sup>finger</sup> pads at which must be of value in grasping roughed surfaces. These pads are well developed whereas the claws seem poorly developed. The degree of grasping of the hind feet is similar to that of *Pseudochinus* but differing from the latter in that there are terminal toe pads similar to those of the front feet. The tail is used but little in climbing. It seems to act as a brace when going from limb to limb. It is seldom used prehensively. The animal depends upon the grasping of the feet rather than the prehensile tail for support in climbing or descending limbs.

Voices: I have heard no sound except the occasional sniffing of the heart when excited.

No nest or attempt to construct such in the moss and cotton on the floor of the cage.

Food: Fruit of *Gaultheria*. Only the inner fleshy parts are eaten, the seeds and skin being discarded. The food is eaten by grasping it in the front paws and sitting up to eat much as a squirrel.

Miscellaneous notes: At the time of writing this animal was hanging by its tail from one of the higher vertical cage sticks. Its tail had a complete loop about the 1" diameter stick. One of the hind feet was grasping a smaller lower stick and the other three were free. On disturbing the heart I found that it was dead. It has apparently lost all of its locomotor senses for it is now lying on its side in a curled up position on the floor of the cage. When first taken it was very active spending much of its time running and climbing about the cage. Today it was less active and now it is stupor.



Aug 5 Lake Habbema, Netherlands New Guinea, 3225m.

The captive died last evening and was prepared as a specimen today.

Aug 11 Lake Habbema, Netherlands New Guinea, 3225m.

① An individual of this genus was brought in alive this morning by one of the Dyaks who was cutting ~~xxx~~ wood for camp. It was taken in about  $\frac{3}{4}$  kilometer of south west from camp. The general region was that of open *Litsea* trees, with scattered clumps of *Podocarpus* and other bush on a grassy moss floor. The nest from which the beast was taken was constructed in an old moss which had become quite solid by the impenetration of roots and of dead or dying plants. The outside of this clump was covered with lichen. Said clump was situated about 3 meters off the ground on a dead tree. The nest itself was about 3 x 4 inches with an entrance at the top through a hole about 1 inch in diameter and 5 inches in length. As near as I could discern there was nothing added to the nest and no lining etc. There was no dung or refuse about the nest. The animal is now being kept alive for observations.

Aug 12

Individual caught last evening yesterday died last evening and was prepared as a skin today.

Aug 18 Lake Habbema, Netherlands New Guinea, 3225m.

② Yesterday afternoon the two Dyak collectors returned from their hunt with 2 of this species. According to them they were taken in a small room in a dead *Litsea*. The tree was felled and on the log, the larger, escaped through the low bush and moss of the open forest.

Sept 14 Lake Habbema, Netherlands New Guinea, 3560m.

1 in 363 traps. Individual crawling to the



Endromicia

collector who brought it in was taken in small runway at the edge of the sub-alpine forest. A point of interest is that these animals are not in hibernation now as the results from Hibernia might show.

Sept 27 2 km N.W. Wilhelmovateps, Netherlands New Guinea 3560 m.  
1 in 358 traps. The individual was taken from a trap set in a small runway through a bush in open thickets of bush. The region in general was one of bush in open land, scattered trees and grass on a uneven hill slope.

Sept 29 2 km E Mt. Wilhelmovateps, Netherlands New Guinea 3950 m.  
1 in 181 traps. Brought in by collector who said it was taken in trap set beneath crosswood bush at or just above the edge of the sub-alpine forest. There are large trees in this region but rather bush, except for the narrow strip of alpine forest which continues along the base of a line above it to or just below where the animal was taken.

Oct 18 9 km N.E. Lake Habbema, Netherlands New Guinea 2860 m.  
1 in 425 traps. Taken in trap set in runway over the mossy forest floor. The general region was that of mossy forest with ~~scattered~~ scattered undergrowth and dead standing timber.

Oct 30 9 km N.E. Lake Habbema, Netherlands New Guinea 2800  
1 in Taken by collectors.

Nov 2 9 km N.E. Lake Habbema, Netherlands New Guinea 2800  
1 brought in by natives. It has apparently been brought out of a tree.

Nov 7 Belu River, 18 km N. Lake Habbema, Netherlands New Guinea 2200 m.  
2 brought in by natives.



Nov 13 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
1 brought in by native. It was still warm so would judge that it was taken some where in the immediate vicinity.

Nov 14 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
4 brought in by natives.

Nov 16 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
1 brought in by natives.

Nov 17 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
5 brought in by natives.

Nov 22 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
1 brought in by natives.

Nov 27 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
1 brought in by natives.

Dec 13 Balim R., Netherlands New Guinea, 1600m.  
1 brought in by Dyak who with the aid of a Papuan caught the bear. According to the Dyak story it was taken from a hole in a tree, one of the trees which fringe the river. These trees are principally casuarina and fig, the latter being in front. Fruit eating bats, *Syromysticis* feed on these fruits during the night. This animal was brought in live and so had the opportunity to observe it under unnatural conditions. The following notes were made - Debra stretched was that of raising up on the hind feet, fore feet in front and the mouth agape.  
The tail of this bear was carried in a large coil (1 1/2 loops) <sup>the base of tail off the coil being close to the body.</sup> This manner of carrying the tail was used only when on the floor of the cage. When climbing about the lumps provided in the cage the tail was carried behind with a ~~the~~ downward curve, being used as a brace with objects with which it came in contact. It was very active being keenly alert to see noise and movement. It did not set about restation provided for it. Died within 24 hrs. of captivity.



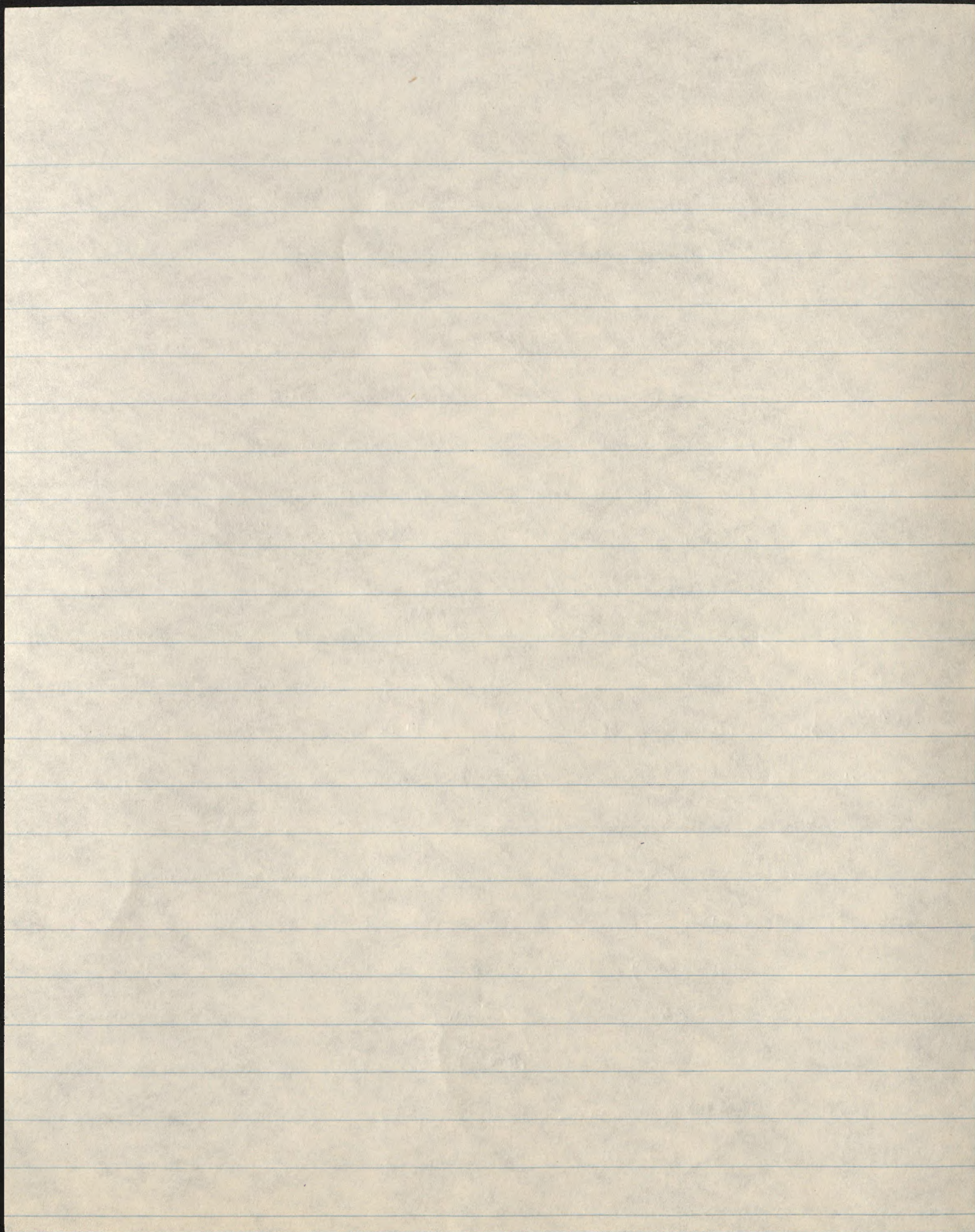
Halicore dugong Two individuals were purchased from natives near Hollandia. Both were said to have been killed near the small islands in Hollandia Bay. The larger female was estimated as being about three meters in length and weighing between six and seven hundred pounds.

Measurements made from the smaller ♀ are as follows. Total length 1650"; flipper length 240<sup>mm</sup>; mid point between fin to tip of nose 380<sup>mm</sup>; spread of tail 520<sup>mm</sup>; tip of tail to anus 530<sup>mm</sup>; anus to vagina 240"; maximum width 400<sup>mm</sup>; maximum depth 370mm.

The remains of some aquatic food plants removed from the mouth of the smaller animal and preserved in alcohol have not as yet been determined.

In the stomach of the larger animal there was approximately five gallons of coarsely masticated sea vegetation. This was determined by Mr. Brass as Zostera sp? and a marine Hydrochord. The native taken animals were pulled up on the beach at the north shore of the bay where a native

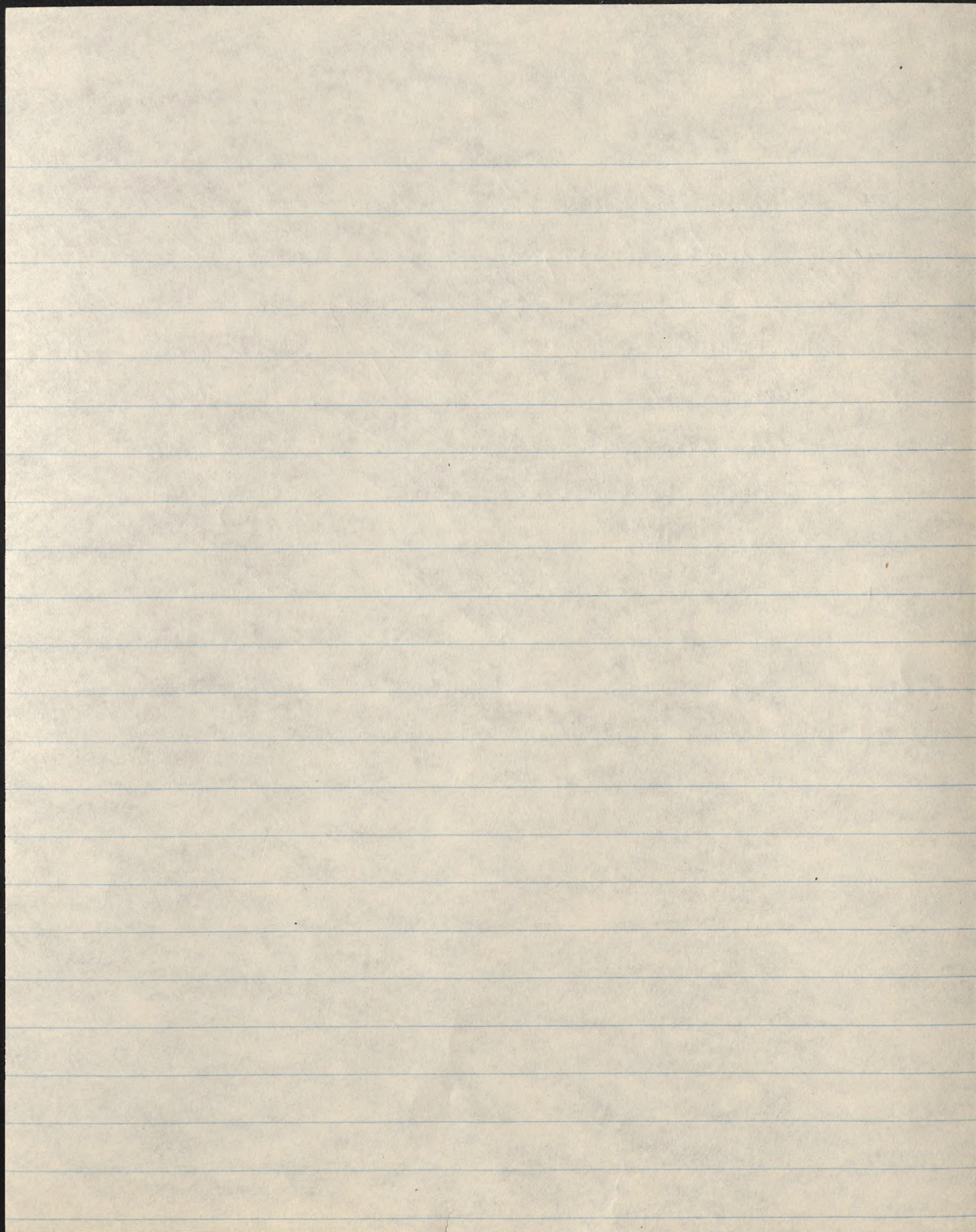






shelter had been built. Here they were  
 crudely smoke-drying large chunks of flesh  
 of other deers. This drying meat and  
 the numerous bones lying about indicate  
 that this had been the base camp of  
 many deer hunters. The people which  
 hunted these animals lived outside of the  
 bay along ~~the~~<sup>the</sup> coastal villages to the  
 west. They sought them not only  
 for their flesh but for the large  
 front ivory tusk which could be sold to  
 the Chinese. While those living within the  
 bay did not hunt the







Halicore dugong. - Two individuals were purchased from natives near Hollandia. Both were said to have been killed near the small islands in Hollandia Bay. The large one was estimated as being about 3 meters in length and weighing between 600 and 700 pounds. Measurements made from the smaller ♀ are as follows: Total 1650 mm.; flipper 240 mm.; mid-point between tip of fin to tip of nose 380 mm.; spread of tail 520 mm.; Tip of tail to anus 530 mm.; anus to vagina 240 mm.; maximum width 400 mm.; maximum depth 370 mm. The remains of some aquatic food plants removed from the mouth of the smaller animal and preserved in alcohol have not as yet been determined. In the stomach of the larger animal there approximately 5 gallons of coarsely masticated sea vegetation. This was determined by Mr. Brass as Zostera sp? and a marine Hydrochoid. These native taken animals were pulled up on the beach at the north shore of the bay where a native shelter had been built. Here they were crudely smoke-drying large chunks of flesh of other dugongs. This drying meat and the numerous bones lying about indicate that this had been the base camp of many dugon hunters. The people who hunted these animals lived outside the bay along in coastal villages to the west, while those living within the bay did not hunt them. They sought them not only for their flesh but for the large front ivory teeth which could be sold to the Chinese.







Wm B. Richardson  
1938

## Halicore

June 14 Hollandia Netherlands New Guinea.

Late this morning a note from Mr. Brass notified me that a dogong had, been recently killed at a neighboring fishing camp. I returned with the natives who delivered the note and found a fine large female animal. According to them this animal had been killed east of "Cuyu Poloo" which the bay meets the ocean on the west of the bay. A complete skeleton as well as small bits of stomach contents were obtained. The stomach was well filled (about 5 gallons) of coarsely macerated sea vegetation. The fact that this animal is used for food is apparent not only in the fact that they displayed the skull of this beast but there was the remains of a small animal which was being smoked over fires in their temporary house. Large chunks of meat having been semi dried in a smoky flame. There were also numerous remains of such as, old bones, of dogongs indicating that this had been the base camp for numerous dogong hunts. The people occupying the region at present come from a village along the coast some north of Hollandia. A thing I forgot to mention is that according to the natives, those from "Cuyu Poloo", "Cuyu Bates" and "Tolati" do not eat the flesh. However, the canines teeth are considered valuable as trade to the Chinese aboard the monthly mail boat. The size of the animal was about 3 meters in length and I would guess the weight to be between 6 and 7 hundred pounds. The native name for this animal is -  
"Doong" = Malay      Duie = Tolati  
Saragu = Cuyu Poloo and Cuyu Bates.



June 18 Hollandia, Netherlands New Guinea.

Mr. Brass today kindly identified the preserved material saved from the stomach of the dogong taken on June 14. - Zostera sp. and a marine Hydrocharid. No. 8854  
Brass's catalogue is an equate plant. This did not however seem to be the one eaten (two cones) but rather a finer marine plant. This was not preserved because of the absence of fruiting bodies.

June 19 Hollandia, Netherlands New Guinea.

Today, (this morning), several men from Tab la sufa came to answer that they had another dogong. The specimen was in the same temporary fishing camp as the previous animal (June 14). It was a young ♀ (?). According to the fishermen it was taken in the same place as the June 14 animal, <sup>east</sup> "north east, (end of) of 'Cayen Batu'".  
Some measurements: - Total length 1650; Flipper length 240; Midpoint between fin to tip of nose 380; Spread of tail horizontally 520; Tip of tail to anus 530; Anus to vagina 240; Maximum ~~length~~ width horizontally 400; Maximum width vertically 370.  
There was food in the mouth of the animal that is ~~to be seen~~ preserved in alcohol. According to the fishermen which favored this animal it is not used as food by the people living in ~~the~~ or about ~~the~~ <sup>Ruyboldt</sup> Bay; but is eaten by the villagers along the coast such as "Tab la sufa", "Tab la nu su", "La car e", "Der men a", "Ya pas ea", "Yon chur", "Moris" and many others. This is evident also by the fact that the bay people do not carry dogongs on their prows while those outside do. This difference in food preference of the natives is not due to the fact that the animals do not occur within the bay for both the bay people and the outside say that dogongs are plentiful within the bay, several told me that they come at night beneath the houses of the ~~Tabata~~ people.



Wm. S. Richards  
1938

## Hipposideros

June 12 Hollandia, Netherlands New Guinea

Today I revisited the cave previously discovered by Hard and myself. (See General Account Page 17, June 7, 1938). Archbold and myself descended into the cave about 8:30 and remained there for  $1\frac{1}{2}$  to 2 hours. We followed the stream course for about 500 yds and turned back without having reached the end. Within 100 ft. of our destination we found a small room 4 ft. wide, 10 ft. long, and 11 ft. high on the limestone roof of which were from 40 to 50 bats hanging. They left immediately after being disturbed with a rock.

In the evening I again returned to the entrance of the cave to obtain specimens. I arrived there about 15 minutes past 6:00 and at 5:53 the first bat came out of the cave and after a short flight (50 ft.) returned to the cave. This was duplicated several times during the next 15 seconds and then the full force of the flight began. They emerged from two entrances near each other at a rate of from 2-4 every second. At first when they emerged they seemed to find it necessary to orient themselves or perhaps become acclimated to the light for they would often fly out one hole and back in the other or take on unnecessary sweeps outside before joining the line of flight southward. As it grew darker there seemed to be little need of this orientation flight, but rather they came immediately into the line of flight. It was also observed that the line of flight was more clearly defined after 5 minutes of after their first emerging. Thus commencing about during the 5 minutes that I watched they seemed to be intent on going to their feeding grounds, only a few were seen feeding en route. I fired a shot into the entrance and obtained two individuals each of a different species. While wiggling on my belly right to the entrance of the cave looking for other bats that I might have killed I saw a snake about a foot long, a slender animal looking much like our racer, ~~with~~ swallowing a bat. The tips of the wings were still protruding from its mouth. I was unable to obtain it for a specimen.



later on I obtained two more bats, one of each species by knocking them down with sticks.

June 15 Hollandia, Netherlands New Guinea.

Today I revisited the bat cave and obtained one specimen by hitting it with a stick so it emerged from into the entrance. When I arrived <sup>6:04</sup> there was a rapid flight from the two entrances averaging about 10 bats each ~~per~~ second. A definite orientation <sup>of the bats</sup> was observed as they emerged, usually flying about in a low circle and into the line of flight to the south. 25% however showed no sign of orientation but rather broke immediately into the flight line.

June 14 Hollandia, Netherlands New Guinea.

Returned this evening to the bat cave. At 6:00 when I appeared on the signs there was a strong flight. At first I was unable to obtain any of the individuals but later in the evening (6:30 - 7:00) I obtained 12 by knocking them down with a stick as they emerged from the cave. I obtained the snake which I assume was the same one previously seen in the cave swallowing bats (a bat). It was coiled along a crack in the bin stone wall in the first small room, 4 feet from the entrance. It was within 5 ft of the same locality that I observed it previously. Battling the bats tonight I found two embryos within two bats. One embryo per bat. Both the snake and embryos are being preserved.

June 17 Hollandia, Netherlands New Guinea.

This morning I sent my two Papuan collectors into the jungle and they returned two hours later with two bats. According to them they had



Wm. B. Richardson  
1938

2

## Hipposideros

taken them from a bat in a tree. As nearly as I can distinguish they are the same species as those taken at the mouth of the cave. The jungle from which they were taken is about 1 kilometer north of Hollandia, elev. 100 m.

Names of bat in the three different local languages.

Kawa (Clawer) - Malay

Padja - Sentani

Hig 9y - Isobati

June 20 Hollandia, Netherlands New Guinea.

This evening my two Poyman collectors returned from the bat cave with 14 individuals, 3 of one species - 11 of the other.

June 20 Hollandia, Netherlands New Guinea.

This evening I attempted to follow the line of flight of the bats from the entrance of the cave to <sup>(the point of my finding)</sup> the line. At 6:10<sup>a</sup> the line was definitely seen crossing the trail to Sentani about 150 yds south of von Seilers. This is about 100 yds from the entrance of the cave. From there the line was definitely seen and subsequently followed ~~west~~ south west diagonally up the low stone hill. The trail was lost after following the trail about 200 yds, up 75 meters. This loss of the trail was due to two factors a decrease in light intensity and a decrease in the number of bats. When I returned to this valley the line crossed the trail at 6:45 there were only two bats seen then going in the reverse direction. It is quite possible that they were not bats of the flight line. The jungle through which the line of flight passed is a cut over rain forest with a heavy undergrowth of thickly foliated small trees. It is quite possible that this type of vegetation is desirable because of the darkness beneath and the early exit of the bats.



July 1

Kallardis, Netherlands New Guinea

This evening I again attempted to follow the line of flight of the bats. At 5:45 there was no evidence of their coming from the cave. I proceeded up the hill to the vicinity of the forest where the trail was lost yesterday evening. 6:00 found the line well proceeded to follow. It continued up the hill turning slightly to about a due westerly direction or possibly a little north of west, over several small <sup>small</sup> spurs, 50 ft below the top on the north side of the hill and here the trail was lost again. At present it appears to me that the line of flight gradually dissolves and is less compact than it is at the entrance or near the entrance of the cave. I hope that further observation will clear this point up. Took one individual from line (it is to be prepared tomorrow)

July 2

Kallardis, Netherlands New Guinea

This evening I again took up the trail where I lost it yesterday. The first bat was seen on the north side of the hill 100 ft below the top at 6:03. The flight was slow and irregular in regards to the number and route of travel. They were spread out over 100 ft of hill slope and as they flew along they seemed to occasionally feed. I followed the trail for 250 yds to the west. The difference in the flight at the entrance or near the entrance and  $\frac{3}{4}$  kilometer distant is: They are flying higher <sup>(60 ft)</sup> line is broader (100-150 ft), and there appears to be less individuals in the line. The difference may be due to one or all of the following factors: High jungle, less undergrowth, or decrease in light intensity. This evening I obtained another bat from the line of flight (to be prepared tomorrow). It is one of the common species



Myotis

Field identification indicates that there are two species in the cave. The least common appears at the exit of the cave with the earlier of the more numerous one. This is apparent from our collecting it various times during the evening at this exit. It is quite possible now that the least common leaves the line immediately or near the first of the line of flight thus leaving the more common to proceed on alone. This may account for the decrease in numbers of bats along the line. Took another individual from the line of flight. (#4109)

July 4 Hollandia, Netherlands New Guinea.

Yesterday evening one of my Dyaks found a single specimen in the grass. It was fluttering in a grassy patch near the mouth of the river  $\frac{1}{2}$  kilometer north east of Hollandia. I cannot explain satisfactorily what it was doing in the grass unless it was driven there by our lights and a gun shot which must have passed within a few (300 yds) of it.  
#4112.

July 15 Hollandia, Netherlands New Guinea

Yesterday afternoon the 2 Malay men and I went into the bat cave 1 km S.W. of Hollandia. It is the same one near Van Saalen that I have previously visited many times. We obtained 13 bats, 4 sp. Myotis and 1 sp. Rhinolophus. We went into the cave about  $\frac{3}{4}$  km., about  $\frac{1}{2}$  again as far as Arakhal and I had previously gone in. The small room where we had previously found bats was vacant but near the end of our journey there were large rooms. Here bats hung in numbers each segregated from the other. In the cave I did not differentiate the different species. The manner of obtaining the bats was by knocking them down with sticks as they flew past



1938  
1939

was. This was not entirely satisfactory for many were out of reach or too quick for us.

In the evening I sent my two Papuan collectors to the mouth of the cave for bats. They were to knock them down as they came out. They returned to camp with three bats 2 by Hypsignathus and 1 Chirolyphus. They did not obtain either of the smaller Hypsignathus that had previously been taken at the cave entrance and along the line of flight.

July 16 Hollandia, Netherlands New Guinea.

The six individuals prepared today were brought in by Tabeti boys who said they had taken them in <sup>or about</sup> their camping (village).

July 17 Hollandia, Netherlands New Guinea.

Papuans brought in a can containing 75 or more of the genera (2 sp.) of bats and one Emballonura. According to them they were collected "on the top" and at the same time pointed in the direction of the limestone hills south west of Hollandia.

July 18 Hollandia, Netherlands New Guinea. <sup>collected</sup>  
Specimen # 4475 ~~and~~ including # 4502

were ~~by~~ brought in yesterday by a Papuan. (See above notes) # 4503 to and including # 4517 were collected by Papuan collectors at the mouth of the bat cave.

Apr. 13 Beardard Camp Idenburg R., Netherlands New Guinea 75 m.

3 individuals <sup>what were being on the ground</sup> shot out of a hollow log. This log was some 3 feet through with a hole of 2 to 1/2 ft. diameter. It was <sup>long time</sup> a relatively dry semi-dark ~~spot~~ resting place. <sup>Had been covered for</sup> All of the individuals were obtained and on examining them it seems as though they are ♀s with subadult young (?). At the entrance of the log hollow was a viper-like snake. Examined stomach of snake but it was empty.



Hyposiderons

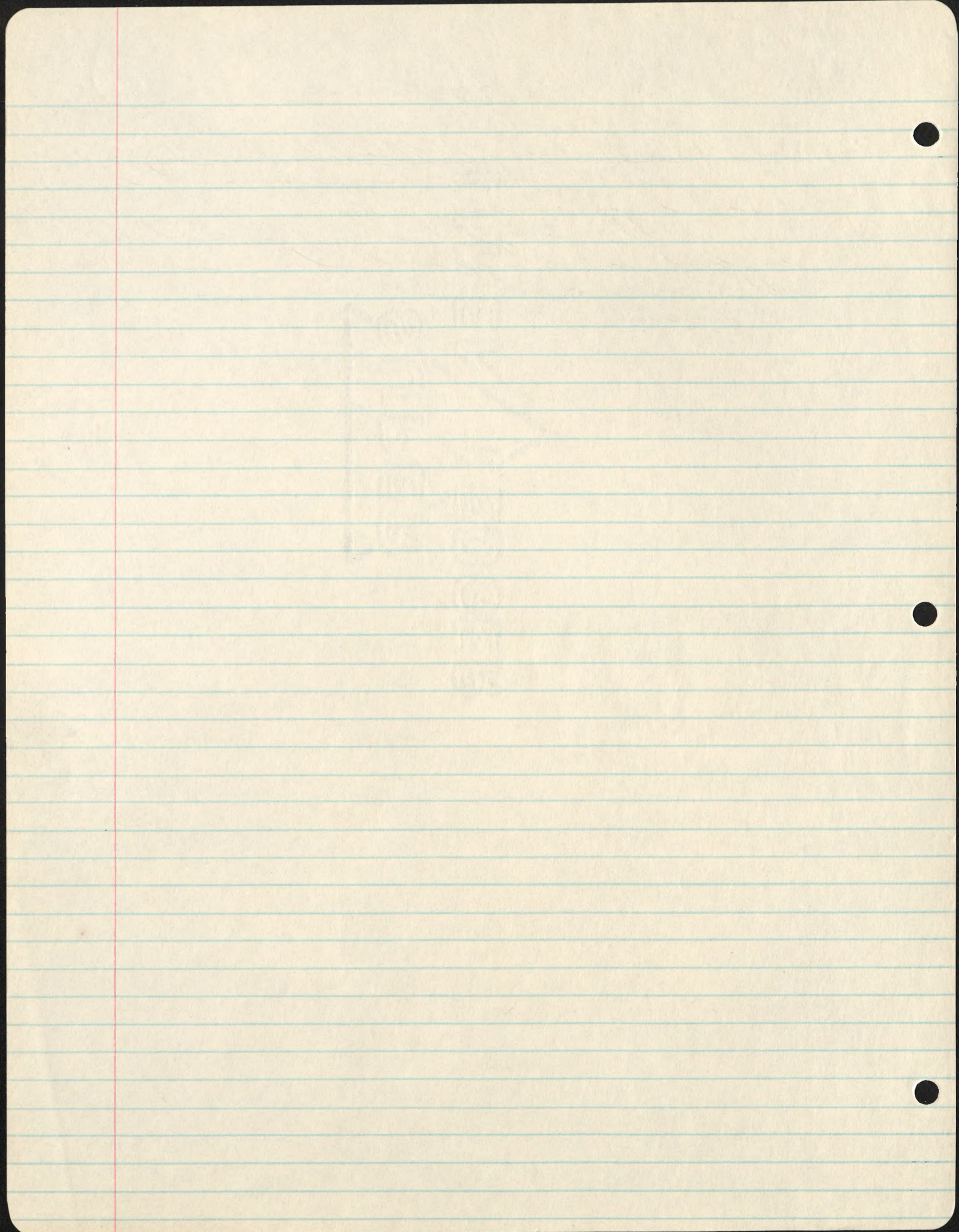
Apr. 20 Bertrand Camps Idenburg R. Netherlands New Guinea 75 m.

1 shot by collecting boy. According to him  
it was hanging <sup>singly</sup> under a log.

Apr. 24

4 shot. Two by Rando collecting boys. Said to have  
been found under a leaf in the forest. Two  
shot in garden godown. They were hanging  
to the atap roof.







Hydromys asper

W.B.R.

Catalog No.	Original No.	Collector	Locality Netherlands New Guinea	Date	Sex	Total length	Tail length	Hind Foot s. u.	Ear from Crown	Head and body length
151462	6158	Archbold + Richardson	Bele R., 18 km. N Lake Habbema	2200 Nov. 26, 1938	<sup>a</sup> ♂	530	277	54	11	253
151465	6206	"	"	" Nov. 27, "	<sup>a</sup> ♂	525	265	53	12	260
151460	6108	"	"	" 25, "	<sup>a</sup> ♂	513	280	55	10	233
151373	5838	"	"	" 19, "	<sup>a</sup> ♂	513	279	52	13	234
151461	6146	"	"	" 26 "	<sup>a</sup> ♂	503	268	59	11	235
151381	5258	"	9 km. NE Lake Habbema	2700 Oct. 27, "	<sup>a</sup> ♂	493	268	55	12	225
151467	7042	"	Bele R. 18 km. N Lake Habbema	2200 Dec. 2, "	<sup>j</sup> ♂	457	240	51	12	217
151459	5924	"	"	" Nov. 21, "	<sup>s</sup> ♂	442	288	58	10	154
110075	5254	"	9 km. NE Lake Habbema	2800 Oct. 27, "	<sup>j</sup> ♂	441	230	52	11	211
151372	5697	"	Bele R. 18 km. N Lake Habbema	2200 Nov. 17, "	<sup>a</sup> ♀	542	285	54	10	257
151468	7098	"	"	" Dec 3, "	<sup>a</sup> ♀	520	273	52	11	247
151380	5218	"	9 km. NE Lake Habbema	2800 Oct. 24, "	<sup>a</sup> ♀	510	270	52	12	240
151466	6244	"	Bele R. 18 km. N Lake Habbema	2200 Nov. 29, "	<sup>s</sup> ♀	500	270	52	11	230
151463	6159	"	"	" 26, "	<sup>s</sup> ♀	458	237	49	11	221
152070	7516	"	6 km. SW Bernhard Camp, Idenburg R.	1200 Feb. 18, 1939	<sup>a</sup> ♂	496	263	52	12	233
152071	7598	measured by collector	10 km. SW " " "	1500 Feb. 28, 1939	<sup>a</sup> ♀	530	285	50	13	245



JOSEPH C. ...

NEW YORK

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Hydromys asper

W.B.R.

Catalogue No.	Total length	Condylobasal length	Basilar length	Zygomatic breadth	Temporal Constriction	Mastoid breadth	Nasal length	Rostral breadth, greatest	Diastema	Palatal length	Palatilar length	Incisive foramina length	Incisive foramina breadth	Greatest width outside molars	Molar row length	Molar row breadth			
151462	48.2	47.3	40.2	26.6	8.5	20.9	15.6	12.6	12.8	26.7	23.2	5.0	3.0	13.6	9.5	3.6			
151465	49.2	48.3	40.5	27.1	8.1	21.3	15.7	12.3	13.2	27.1	23.4	5.8	3.1	13.7	9.4	3.6			
151460	48.0	47.2	39.3	27.6	8.3	21.6	15.3	12.6	12.8	26.0	22.4	5.0	2.8	13.0	9.1	3.3			
151373	48.0	47.2	39.8	26.9	9.0	22.1	14.4	11.9	12.7	26.8	23.2	4.8	2.0	13.4	9.4	3.8			
151461	46.9	46.0	38.3	26.2	8.8	21.3	14.5	12.5	11.8	25.8	22.0	4.2	2.4	12.8	9.5	3.5			
151381	47.8	47.0	39.1	26.0	8.2	21.6	14.0	11.9	12.8	26.3	22.5	5.4	3.2	13.2	9.0	3.5			
151467	—	—	—	—	9.1	—	14.5	11.7	11.6	25.0	21.4	4.7	2.7	12.9	9.8	3.7			
151459	49.2	48.7	41.2	27.8	8.8	22.0	15.8	13.5	13.3	27.4	23.6	4.9	3.1	13.6	9.4	3.5			
110075	43.5	42.7	35.7	24.9	9.4	20.5	13.1	11.6	11.3	24.1	20.5	4.1	2.5	12.7	9.1	3.4			
151372	47.5	47.4	39.8	—	7.6	21.6	14.3	11.7	12.7	26.7	22.8	5.2	2.6	12.3	8.8	3.4			
151468	47.8	46.3	38.8	27.0	8.9	21.4	13.9	12.5	11.9	25.7	22.0	4.9	2.6	13.0	9.1	3.5			
151380	48.4	48.2	40.7	26.6	8.0	21.7	14.4	11.4	13.5	27.0	23.5	5.0	2.4	12.7	9.0	3.1			
151466	45.7	44.6	40.5	25.6	8.4	20.5	14.1	11.9	12.2	25.3	21.9	5.1	2.7	12.4	9.0	3.5			
151463	44.7	43.6	36.8	25.2	8.5	20.6	14.3	11.0	11.0	24.9	21.5	4.6	2.5	12.5	9.1	3.5			
152070	48.2	47.2	39.2	26.8	8.9	21.6	14.5	12.9	12.8	25.9	22.1	4.9	2.5	13.1	9.4	3.4			
152071	48.8	48.4	41.4	26.4	8.5	21.8	14.0	12.8	13.6	26.9	23.3	5.6	3.1	13.1	9.5	3.4			



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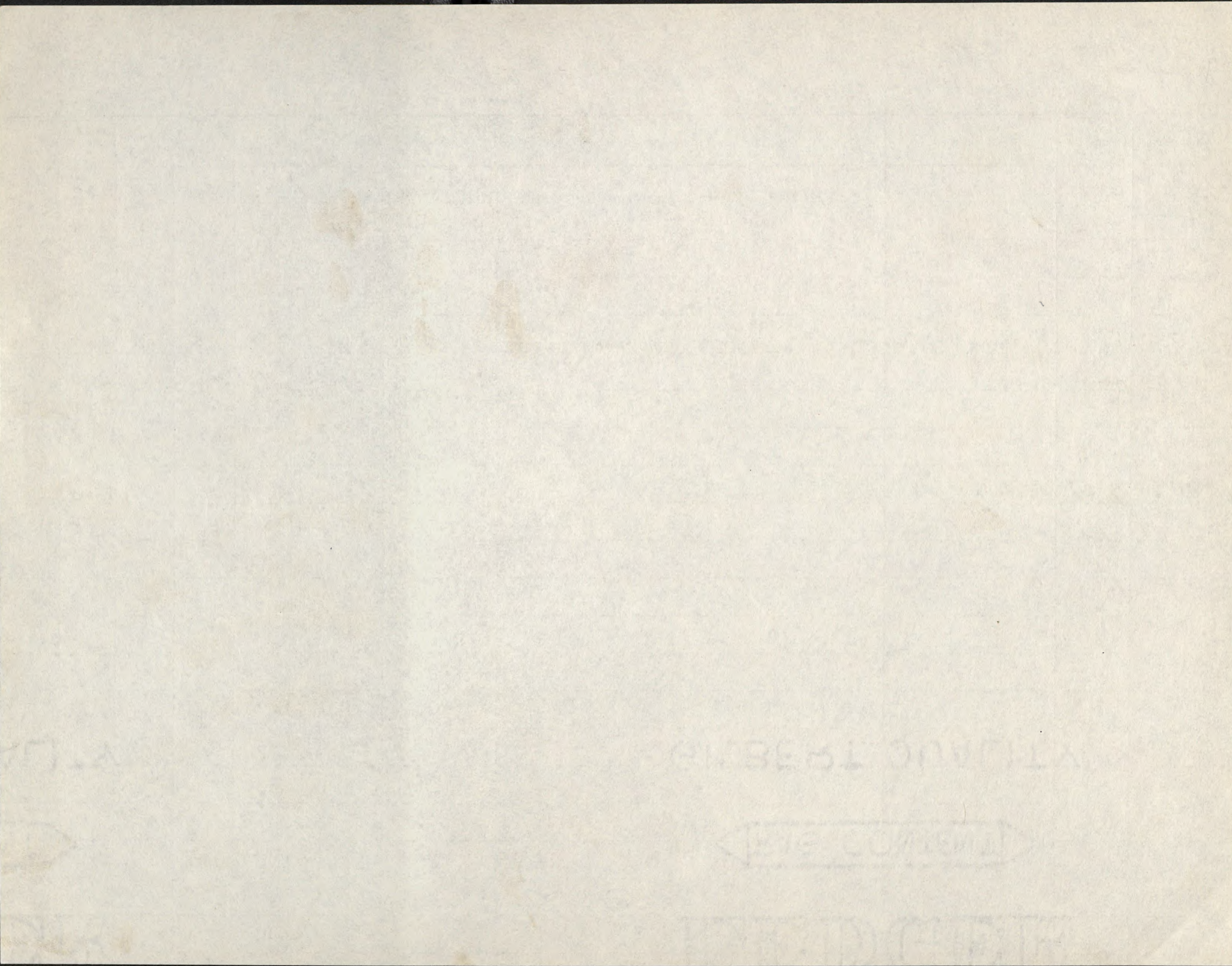


Hydromys asper

W.B.R.

Catalog No.	Original No.	Collector	Locality	Date	Sex	Total length	Tail length	Hind Foot s. u.	Ear from Crown	Head and body length
103256	548	G. Stein	Weyland geb.	Sept. 9, 1931	<sup>s</sup> ♂	472	250	54	16	222
103255	545	"	"	" 2, "	<sup>a</sup> ♀	489	241	48	15	248
101950	172	F. Shaw Mayer	The Gebroeders, Weyland Range <sup>6000ft.</sup>	Aug. 16, 1930	<sup>j</sup> ♀	465	258	48	15	207
101951	220	"	"	Aug 22, "	<sup>a</sup> ♀	431	231	48	16	200
108468	3762	Archbold + Tate	<sup>Papua, C.D.</sup> Kagi. (Leili creek), Kokoda Rd., 1300	Mar. 11, 1937	<sup>a</sup> ♂	525	290	53	13	235
108469	3763	"	"	"	<sup>a</sup> ♀	523	285	51	12	238







Hydromys asper

W.B.R.

Catalogue No.	Total length	Condylobasal length	Basilar length	Zygomatic breadth	Temporal Constriction	Mastoid breadth	Nasal length	Rostral breadth, greatest	Diastema	Palatal length	Palatilar length	Incisive foramina length	Incisive foramina breadth	Greatest width outside molars	Molar row length	Molar row breadth
103256	45.0	43.6	36.6	25.5	8.0	20.4	13.6	11.8	11.1	—	—	4.5	2.5	12.8	9.8	3.8
103255	46.4	44.5	37.6	26.7	8.7	21.0	13.6	11.8	12.1	25.0	21.8	4.9	2.7	13.6	9.7	3.4
101950	44.6	43.4	36.4	25.3	8.8	20.2	13.3	11.7	10.9	24.5	21.0	4.1	2.3	12.0	9.2	3.6
101951	44.7	44.3	37.7	26.6	9.5	20.8	13.5	12.5	11.8	24.4	21.1	4.6	2.6	—	9.4	3.6
108468	48.9	47.9	39.4	28.0	8.4	22.7	15.4	13.4	12.7	27.2	22.8	5.0	3.1	13.7	9.8	3.5
108469	49.6	48.8	41.0	28.4	7.9	23.0	15.4	12.8	13.2	27.6	23.7	4.4	2.9	13.6	9.8	3.5



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Hydromys chrysogaster

W.B.R.

Catalogue No.	Total length	Condylobasal length	Basilar length	Zygomat. breadth	Temporal Constriction	Mastoid breadth	Nasal length	Rostral breadth, greatest	Diastema	Palatal length	Palatilar length	Incisive foramina length	Incisive foramina breadth	Greatest width outside molars	Molar row length	Molar row breadth			
105201	56.5	56.3	46.8	27.1	7.3	22.1	18.8	11.2	16.1	31.3	26.0	6.2	4.0	—	8.9	2.9			
105776	50.3	50.0	40.8	24.8	6.9	20.2	16.4	10.0	13.4	27.2	22.3	5.6	3.5	10.4	7.6	2.8			
105774	—	48.0	39.7	24.0	6.8	—	15.5	9.2	13.3	26.4	22.1	5.5	2.8	10.5	8.1	2.8			
105773	—	—	—	24.1	6.9	—	15.4	9.6	13.7	26.8	22.3	6.0	3.3	11.0	8.0	2.9			
105772	—	—	—	21.5	7.4	—	—	8.1	12.0	24.4	20.4	5.2	3.0	10.2	7.8	2.8			
105775	—	—	—	—	—	19.0	—	—	—	—	—	—	—	—	7.8	2.8			
105777	46.1	46.0	38.6	22.5	7.4	18.2	—	8.4	12.5	25.5	21.2	5.2	2.8	10.2	7.8	2.7			
105779	48.9	48.5	40.4	—	6.6	19.4	16.1	9.7	13.7	26.5	22.0	5.5	3.3	10.8	7.8	2.8			
105778	44.8	44.1	37.0	21.7	7.5	18.0	14.1	8.8	12.2	24.1	20.3	5.2	3.2	10.2	7.5	2.7			
105780	44.0	43.2	36.0	21.6	6.8	18.5	14.0	8.4	12.0	23.7	20.0	4.8	2.7	10.0	7.5	2.8			
105781	39.8	39.4	—	19.5	6.9	17.1	12.9	8.0	10.4	22.0	18.7	4.8	2.9	—	7.7	2.7			
105782	45.0	44.2	36.7	22.8	7.2	18.5	14.9	8.8	12.1	24.2	20.1	5.0	2.7	10.8	7.7	2.7			



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Hydromys chrysogaster

W.B. R.

Catalog No.	Original No.	Collector	Locality Papua W. D.	Date	Sex	Total length	Tail length	Hind Foot s. u.	Ear from Crown	Head and body length
105201 x	2498	Archbold + Tate	1 mi. below mouth Black R. Upper Fly	July 25, 1936	<sup>a.</sup> ♂	553	300	61	13	253
105776	2751	"	Lake Daviumbu, Middle Fly	Sept. 12, "	<sup>s.</sup> ♂	480	235	54	—	245
105774	2631	"	"	Aug. 28, "	<sup>a.</sup> ♂	465	225	50	—	240
105773	2627	"	"	Aug. 27, "	<sup>s.</sup> ♂	435	200	47	—	235
105772	2611	"	"	Aug. 26, "	<sup>j.</sup> ♂	392	191	47	—	201
105775	2748	"	"	Sept. 12, "	<sup>s.</sup> ♀	460	225	52	—	235
105777	27 <sup>5</sup> 85	"	"	Sept. 16, "	<sup>s.</sup> ♀	428	212	50	14	216
105779	3054	"	N. bank opp. Sturt Isl., Fly	Oct. 24, "	<sup>a.</sup> ♂	450	230	54	14	220
105778	2944	"	"	Oct. 9, "	<sup>s.</sup> ♀	405	187	44		218
105780	3062	"	"	Oct. 25, "	<sup>s.</sup> ♀	405	199	47	15	206
105781	3191	"	East bank, Gaima, Fly	Nov. 20, "	<sup>j.</sup> ♀	308	152	39	13.5	156
105782	3273	"	Wasi Kussa: Tarara	Dec. 12, "	<sup>s.</sup> ♂	415	205	47	13	210



10

EVERETT

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100

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100



Hydromys chrysoaster

W.B.R.

Catalog No.	Original No.	Collector	Locality	Date	Sex	Total length	Tail length	Hind Foot s. u.	Ear from Crown	Head and body length
108470	3617	Archbold + Tate	Baruari rest house, Astrolabe Range, Papua C.D. <sup>520</sup>	Feb. 18, 1937	<sup>s</sup> ♂	480	235	52	15	245
152072	7631	Archbold + Richardson	4 km. SW Bernhard Camp, Idenburg R.	Mar. 8, 1939	<sup>a.</sup> ♂	510	254	54	14	256
152073	7725	"	"	Mar 24, 1939	<sup>a.</sup> ♂	505	245	55	15	260
152076	7809	"	"	Apr. 6, "	<sup>a.</sup> ♂	477	234	53	15	243
152074	7782	"	"	" 2, "	<sup>a.</sup> ♂	467	227	54	13	240
152075	7794	"	"	" 3, "	<sup>s</sup> ♀	466	222	49	—	244
152078	7970	"	Idenburg River, Bernhard Camp	" 30, "	<sup>a.</sup> ♂	480	228	54	16	252
152077	7945	"	"	" 27, "	<sup>a.</sup> ♂	408	160	47	13	248
10950 <sup>3</sup>	7266	"	Hollandia	0 Dec. 27, 1938	<sup>a?</sup>	—	—	—	—	—



1870

1871

1872



Hydromys chrysogaster

W.B.R.

Catalogue No.	Total length	Condylar basal length	Basilar length	Zygomatic breadth	Temporal constriction	Mastoid breadth	Nasal length	Rostral breadth, greatest	Diastema	Palatal length	Palatilar length	Incisive foramina length	Incisive foramina breadth	Greatest width outside molars	Molar row length	Molar row breadth			
108470	<del>49.9</del> 49.3	49.3	41.2	25.0	6.7	20.0	17.2	9.9	14.2	27.9	23.0	5.3	3.5	11.2	7.6	2.7			
152072	—	—	—	24.0	7.0	19.8	—	—	—	—	—	—	—	11.4	8.3	2.9			
152073	49.3	49.2	40.9	24.0	7.1	20.1	15.3	9.5	13.7	27.8	23.1	4.7	3.4	11.2	8.2	2.9			
152076	49.0	48.8	40.5	23.8	6.7	19.5	15.5	9.6	13.5	27.0	22.5	5.1	3.3	—	—	3.0			
152074	—	48.2	39.6	23.4	7.0	—	14.8	9.2	13.0	26.6	21.9	4.8	3.0	10.7	8.2	2.9			
152075	—	47.4	—	23.4	7.4	19.2	14.7	9.2	12.4	26.3	21.8	4.7	2.9	10.6	8.4	2.9			
152078	49.9	50.5	41.9	23.8	7.2	19.6	15.4	10.0	14.3	28.1	23.4	5.4	3.2	11.5	8.0	2.9			
152077																			
109503	—	—	—	25.0	6.7	20.2	17.2	10.7	15.3	30.7	25.4	5.8	3.7	11.5	8.8	3.0			



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Neohydromys

Dark color phase ♂ and ♀

W.B.R.

Catalog No.	Original No.	Collector	Locality Netherlands New Guinea		Date	Sex	Total length	Tail length	Hind Foot s. u.	Ear from Crown	Head and body length
110060	4752	Archbold & Richardson	Lake Habbema	3225	Aug 20, 1938	a. ♂	337	182	37	9	155
110061	4753	"	"	"	" 20, "	s.a. ♂	331	185	37	8	144
110078	5071	Measured by collector	7km. NE Wilhelmina top	3560	Sept. 24, "	a. ♂	329	167	36	6	162
110051	4701	"	Lake Habbema	3225	Aug. 14 "	s.a. ♂	322	166	36	8	156
110071	4835	"	"	"	" 27, "	a. ♂	322	175	37	8	147
110073	4844	"	"	"	" 28, "	s.a. ♂	317	171	36	8	146
110069	4824	"	"	"	" 25 "	s.a. ♂	300	156	35	8	144
110062	4765	"	"	"	" 21 "	s.a. ♂	295	149	33	10	146
110068	4814	"	"	"	" 24 "	s.a. ♂	294	145	36	8	149
110076	4858	"	7km. NE Wilhelmina top	3600	Sept. 8, "	a. ♀	313	160	35	7	153
110072	4836	"	Lake Habbema	3225	Aug. 27, "	a. ♀	305	162	35	8	143
110077	5055	Measured by collector	7km. NE Wilhelmina top	3560	Sept. 23, "	s.a. ♀	290	154	35	8	136
110079	5085	Measured by collector	"	"	" 27, "	a. ♀	274	130	35	8	144
110048	4585	"	Lake Habbema	3225	Aug 4, "	Juv. ♀	209	100	30	7	109
110066	4798	"	"	"	23 "	Juv. ♀	190	90	27	6	100



ALFRED J. BROWN

THE FINEST

STATIONERY

NEW YORK



Neohydromys

Dark colored phase ♂ and ♀.

W.B.P.

Catalogue No.	Total length	Condylar length	Basilar length	Zygomatic breadth	Temporal constriction	Mastoid breadth	Nasal length	Rostral breadth, greatest	Diastema	Palatal length	Palatilar length	Incisive foramina, length	Incisive foramina, breadth	Greatest width outside molars	Molar row length	Molar row breadth			
110060	35.5	35.0	28.7	17.7	5.5	15.4	11.7	6.5	9.3	18.3	15.3	4.4	2.5	7.8	5.4	1.9			
110061	34.2	34.2	28.2	17.2	5.7	—	11.0	6.1	8.6	18.0	14.9	3.8	2.4	7.5	5.2	1.8			
110078	35.1	34.5	—	—	5.3	—	—	6.1	9.1	18.1	14.9	4.2	2.3	8.1	5.1	1.9			
110051	34.4	34.0	28.0	16.9	5.6	14.8	11.7	6.1	8.7	17.5	14.6	4.2	2.4	7.5	5.3	1.8			
110071	—	—	—	—	5.5	—	11.7	5.8	9.0	18.2	15.4	4.0	2.3	7.5	5.2	1.8			
110073	—	—	—	17.3	5.5	15.0	—	—	—	—	—	—	—	7.0	5.3	1.9			
110069	—	—	—	16.9	5.6	—	10.8	6.0	8.1	17.1	14.1	4.0	2.4	7.2	5.2	2.0			
110062	—	—	—	16.3	5.8	—	10.0	—	8.0	16.6	14.0	3.8	—	—	5.3	1.9			
110068	—	—	—	16.9	5.4	—	11.5	5.6	8.8	17.5	14.3	4.1	2.1	7.4	5.1	1.7			
110076	34.0	33.3	27.7	17.0	5.3	15.3	11.3	5.8	8.9	17.5	14.7	4.0	2.3	8.1	5.3	1.8			
110072	34.2	33.0	26.6	16.9	5.5	14.8	11.8	5.8	8.5	17.1	14.2	4.2	2.3	7.3	4.9	1.7			
110077	33.9	33.3	27.4	17.4	5.3	15.3	—	—	8.2	17.3	14.2	4.0	—	7.6	5.2	1.8			
110079	34.7	34.7	28.7	17.5	5.3	15.4	11.9	6.2	—	18.0	15.0	4.5	2.4	—	—	—			
110048	30.0	28.2	22.9	—	5.7	—	8.9	5.3	7.2	15.3	13.0	3.4	2.0	7.0	5.0	1.8			
110066	27.7	26.2	21.6	—	5.4	12.8	8.2	5.3	6.3	13.3	11.1	2.9	2.0	6.8	5.0	1.8			



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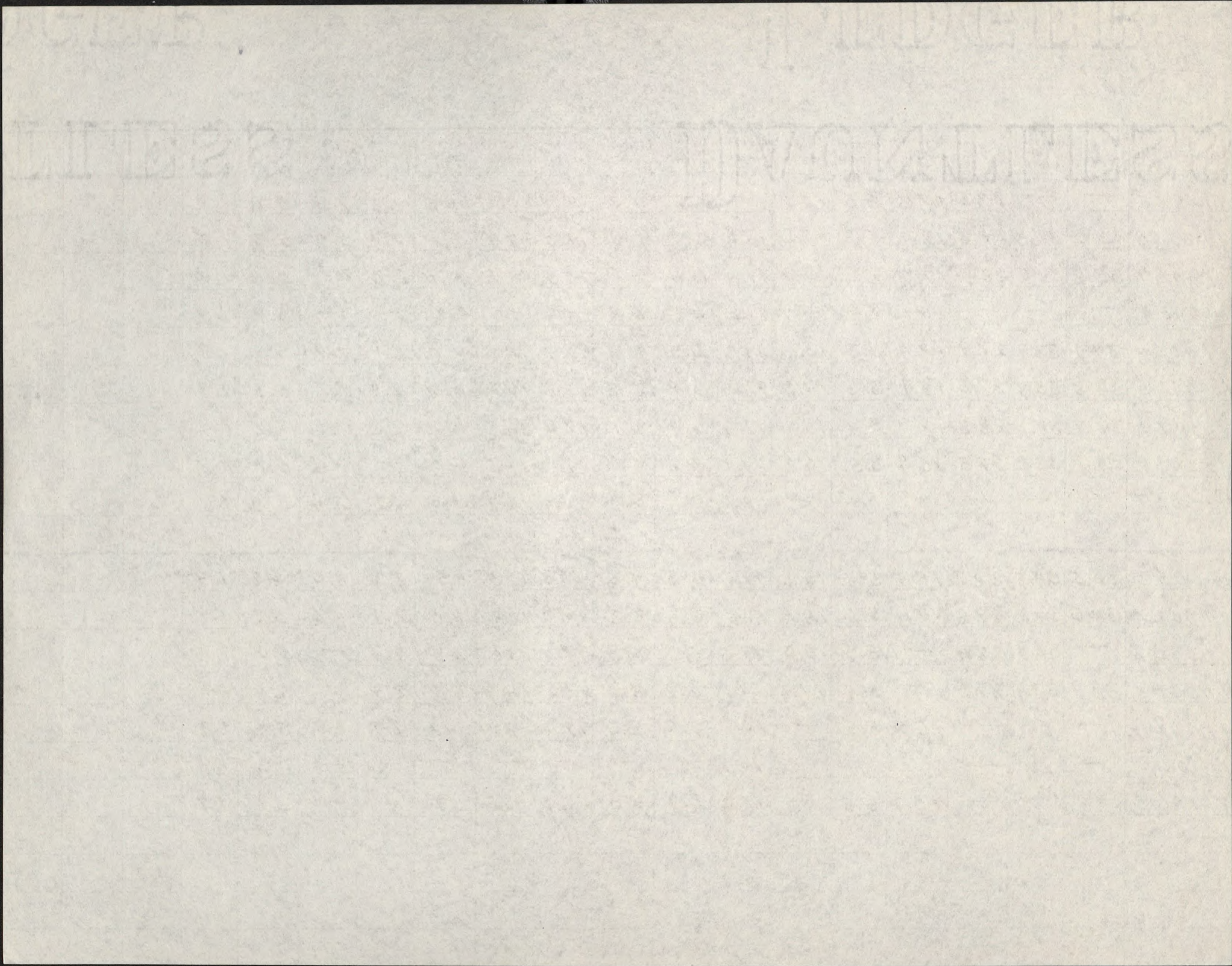
Neohydromys

Light colored phase ♂ and ♀

W.B.R.

Catalogue No.	Total length	Condylar basal length	Basilar length	Zygomatic breadth	Temporal constriction	Mastoid breadth	Nasal length	Rostral breadth, greatest	Diastema	Palatal length	Palatilar length	Incisive foramina length	Incisive foramina breadth	Greatest width outside molars	Molar row length	Molar row breadth			
110070	—	—	28.5	17.3	5.5	15.1	—	—	9.3	—	15.5	4.4	2.2	7.8	5.1	1.8			
110050	35.0	34.5	<del>28.4</del> 28.4	18.4	5.8	15.5	11.5	6.7	9.0	18.0	14.9	4.1	2.4	8.0	5.3	1.8			
110067	35.2	34.5	28.4	17.6	5.6	15.3	11.4	6.4	8.9	18.3	15.1	4.4	2.3	7.8	5.1	1.8			
110054	—	—	—	—	5.4	—	11.2	<del>6.7</del>	8.8	—	—	4.0	—	—	5.4	1.9			
110056	34.1	33.9	27.9	17.4	5.3	15.2	11.3	6.5	8.8	17.6	14.7	4.0	2.1	7.7	5.3	1.9			
110055	34.3	33.8	27.5	18.1	5.6	14.8	11.7	6.1	8.8	17.6	14.7	4.2	2.2	7.7	5.3	1.9			
110074	34.5	34.1	28.3	17.7	5.4	15.1	11.6	6.4	9.1	17.6	14.8	4.1	2.3	7.5	5.2	1.8			
110052	33.7	33.2	27.5	16.9	5.5	14.8	11.1	6.2	8.6	17.1	14.5	4.0	—	7.6	5.1	1.8			
110057	—	—	—	—	5.6	—	10.7	5.7	8.0	16.4	13.7	3.8	2.2	7.4	5.2	1.8			
110053	35.3	34.8	28.7	18.4	5.8	15.5	11.4	6.3	9.3	18.3	15.3	4.5	2.3	8.0	5.2	1.9			
110049	34.6	34.3	28.2	17.1	5.6	14.9	11.4	6.4	8.8	17.8	14.9	4.0	2.1	7.8	5.3	1.8			
110058	—	33.9	28.4	—	5.3	15.0	11.6	6.1	8.8	17.5	15.0	3.8	2.4	—	5.0	1.8			
110059	33.8	33.4	27.5	—	5.4	14.8	11.1	6.2	8.6	17.5	14.8	4.2	2.4	—	5.3	1.9			
110064	—	—	—	16.5	5.5	—	10.2	6.0	8.2	17.0	14.0	4.3	2.3	7.5	5.4	1.9			
110065	—	—	—	—	—	—	10.7	—	—	—	—	—	—	—	5.3	1.9			
110063	—	—	—	15.7	5.5	—	10.0	5.9	8.0	16.1	13.6	3.9	—	—	5.1	1.7			







Neohydromys

Light color phase ♂ and ♀

W.B.P.

Catalog No.	Original No.	Collector	Locality <i>Netherlands New Guinea</i>	Date	Sex	Total length	Tail length	Hind Foot s. u.	Ear from Crown	Head and Body length
110070	4834	Aronbold + Richardson	Lake Habbema	3225 Aug 27, 1938	<sup>a.</sup> ♂	345	184	37	10	161
110050	4682	"	"	" 12, "	<sup>a.</sup> ♂	341	187	39	9	154
110067	4813	"	"	" 24, "	<sup>a.</sup> ♂	340	187	37	9	153
110054	4721	"	"	" 18, "	<sup>a.</sup> ♂	328	173	37	8	155
110056	4723	"	"	" 18, "	<sup>a.</sup> ♂	327	174	36	9	153
110055	4722	"	"	" 18, "	<sup>a.</sup> ♂	317	170	36	9	147
110074	4847	"	"	" 29, "	<sup>a.</sup> ♂	312	160	35	9	152
110052	4702	"	"	" 14, "	<sup>s.a.</sup> ♂	305	161	37	9	144
110057	4724	"	"	" 18, "	<sup>s.a.</sup> ♂	285	146	34	8	139
110053	4713	"	"	" 14, "	<sup>a.</sup> ♀	350	190	38	9	160
110049	4592	"	"	" 5, "	<sup>a.</sup> ♀	337	184	36	9	153
110058	4725	"	"	" 18, "	<sup>a.</sup> ♀	316	164	35	8	152
110059	4726	"	"	" 18, "	<sup>a.</sup> ♀	308	169	35	8	139
110064	4786	"	"	" 22, "	<sup>s.a.</sup> ♀	295	161	35	8	134
110065	4787	"	"	" 23, "	<sup>s.a.</sup> ♀	277	145	34	8	132
110063	4766	"	"	" 21, "	<sup>s.a.</sup> ♀	273	143	33	8	130



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WILLIAM THORNTON

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*Pseudohydromys*

W.B.P.

Catalog No.	Original No.	Collector	Locality <i>Netherlands New Guinea</i>	Date	Sex	Total length	Tail length	Hind Foot s. u.	Ear from Crown	Head and body
150487	5113	Archbold -Richardson	9km NE Lake Habbema	2800m Oct. 12, 1938	♂ a	257	135	30	17	
150503	5130	"	"	" 13 "	♂ a	252	134	29	18	
150511	5144	"	"	" 15 "	♂ a	248	131	30	17	
150512	5143	"	"	" 15 "	♂ a	261	135	31	17	
150521	5152	"	"	" 16 "	♂ a	256	132	30	17	
150524	5162	"	"	" 17 "	♂ a	240	123	29	16	
150534	5176	"	"	" 18 "	♂ a	250	130	31	17	
150536	5178	"	"	" 18 "	♂ a	249	130	30	18	
150533	5175	"	"	" 18 "	♂ a	246	127	30	17	
150538	5182	"	"	" 19 "	♂ a	250	131	30	18	
150542	5188	"	"	" 20 "	♂ a	245	122	29	17	
150544	5191	"	"	" 21 "	♂ a	249	139	30	17	
150560	5209	"	"	" 22 "	♂ a	250	128	30	18	
150563	5215	"	"	" 23 "	♂ a	250	128	30	18	
150566	5221	"	"	" 24 "	♂ a	245	124	31	16	
150578	5241	"	"	" 26 "	♂ a	237	120	28	15	
150579	5242	"	"	" 26 "	♂ a	242	124	30	18	
150577	5240	"	"	2700 " 26 "	♂ a	250	129	30	17	
150601	5284	"	"	2800 " 30 "	♂ a	242	120	30	16	
150602	5287	"	"	2700 " 30 "	♂ a	240	118	29	16	
150603		"	"	" 30 "	♂ a	240	129	27	15	



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Pseudohydromys

♂ and ♀

W. B. R.

Catalogue No.	Total length	Condylobasal length	Basilar length	Zygomatic breadth	Temporal Constriction	Mastoid breadth	Nasal length	Rostral breadth, greatest	Diastema	Palatal length	Palatilar length	Incisive foramina, length	Incisive foramina, breadth	Greatest width outside molars	Molar row length	Molar row breadth			
100326																			
110344	—	—	—	—	—	—	8.5	—	8.2	14.1	12.2	2.5	1.5	5.1	2.8	1.0			
110366	—	—	—	—	—	—	8.1	—	8.2	13.6	11.8	2.2	1.5	4.7	2.7	1.0			
150772	24.9	24.7	20.9	12.0	5.6	10.6	7.9	5.2	7.9	13.2	11.3	2.3	1.7	5.0	2.8	1.0			
152079	—	—	—	—	4.5	—	6.4	4.5	5.2	—	—	2.6	1.4	4.3	2.5	0.8			
110391	—	—	—	12.0	5.4	—	8.6	5.1	7.9	13.8	11.8	2.1	1.6	4.8	2.8	1.0			



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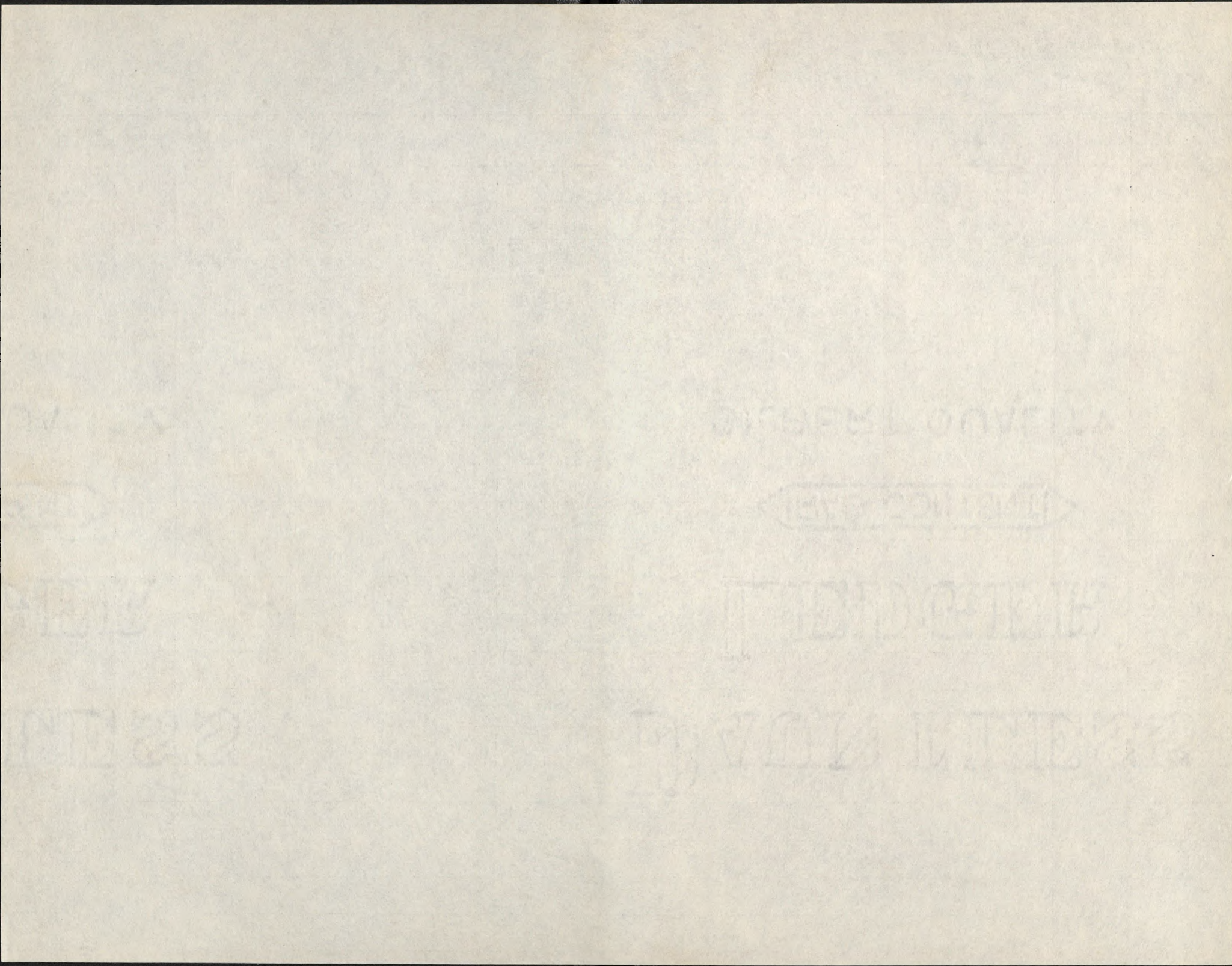
Pseudohydromys

♂ and ♀

W.D.R.

Catalog No.	Original No.	Collector	Locality	Date	Sex	Total length	Tail length	Hind Foot s. u.	Ear from Crown	Head and body length	
			Netherlands New Guinea								
110326	5034	Archibald Richardson <small>Measured by collector</small>	7km NE Wilhelmina top	3560	Sept. 19, 1938	♂	196	91	19	10	105
110344	4857	"	"	3600	" 8, "	♂	205	90	21	11	115
110366	4880	"	"	3560	" 11, "	♂	194	87	21	10	107
150772	4635	"	Lake Habbema	3225	Aug. 8, "	♂	191	90	20	8	101
152079	7677	"	4km SW Bernhard Camp, Idenburg R.	850	Mar. 16, 1939	♂ <small>S.A.</small>	172	92	20	8	80
110391	4908	"	7km NE Wilhelmina top	3560	Sept. 14, 1938	♀ <small>a.</small>	197	95	21	9	102







## Pseudohydromys

W.B.P.

Catalogue No.	Total length	Condylobasal length	Basilar length	Zygomatic breadth	Temporal constriction	Mastoid breadth	Nasal length	Rostral breadth, greatest.	Diastema	Palatal length	Palatilar length	Incisive foramina length	Incisive foramina breadth	Greatest width, outside molars	Molar row length	Molar row breadth			
150487	32.6	31.6	25.5	15.1	5.8	12.8	12.5	6.1	7.6	17.0	13.2	4.7	2.4	6.7	4.5	1.7			
150503	31.6	30.3	24.3	15.0	6.0	—	12.0	—	7.3	16.2	12.5	4.6	2.4	6.9	4.6	1.7			
150511	32.5	31.3	—	15.1	5.9	12.8	12.7	—	7.7	16.9	13.0	4.8	2.3	6.9	4.8	1.8			
150512	32.5	31.0	25.1	15.1	5.8	—	12.3	5.9	7.8	16.5	13.0	4.9	2.3	6.7	4.7	1.8			
150521	—	—	—	14.8	5.8	—	12.4	6.1	7.9	16.5	12.8	4.7	2.4	6.7	4.6	1.7			
150524	31.3	30.2	24.4	15.0	5.9	12.2	12.0	5.6	7.4	16.2	12.6	4.8	2.4	6.8	4.7	1.7			
150534	32.2	31.0	—	—	5.6	—	12.5	6.1	7.7	16.5	12.5	4.8	2.5	7.1	4.7	1.7			
150536	31.8	30.5	24.5	14.5	5.8	12.6	11.7	6.0	7.8	16.3	12.8	4.7	2.5	6.8	4.5	1.7			
150533	32.0	30.7	24.9	—	6.0	12.9	12.5	6.2	7.9	16.7	12.8	5.0	2.5	7.1	4.6	1.7			
150538	32.0	30.3	25.0	15.1	5.9	—	12.5	—	7.8	16.5	13.0	5.0	2.4	6.6	4.6	1.7			
150542	31.3	29.8	—	14.8	5.8	—	12.0	—	7.4	16.0	12.4	4.7	2.4	6.8	4.7	1.8			
150544	—	—	—	14.7	5.7	12.4	12.5	6.1	7.7	16.8	13.5	5.1	2.4	7.0	4.7	1.7			
150560	—	—	—	—	—	—	12.3	6.0	7.9	16.8	13.2	5.0	2.5	6.8	4.6	1.7			
150563	—	—	—	—	5.9	—	12.0	—	7.9	16.7	13.1	4.9	2.3	6.7	4.4	1.7			
150566	32.4	31.2	25.3	—	5.9	13.0	12.9	—	7.9	16.7	12.9	4.9	2.4	6.8	4.6	1.7			
150578	31.6	30.2	24.5	—	5.9	—	11.9	5.9	7.6	16.2	12.9	4.6	2.4	6.6	4.7	1.7			
150579	<i>Murray</i>																		
150577	32.0	31.6	25.0	15.2	6.0	13.0	12.5	6.3	7.7	16.5	13.0	4.8	2.5	7.0	4.8	1.8			
150601	—	—	—	—	5.9	—	12.5	—	7.9	16.9	13.2	5.1	2.5	6.6	4.7	1.8			
150602	31.8	30.5	24.8	14.5	5.9	12.6	12.5	—	7.6	16.5	12.7	5.0	—	6.8	4.7	1.7			
150603	32.0	31.0	25.0	—	5.7	12.4	12.6	6.0	7.8	16.7	13.0	4.8	—	6.8	4.7	1.8			



CHANDLER

WISCONSIN

CHIEF

MAY 23

WILLIAM W. CHANDLER

WISCONSIN

CHIEF

MAY 23



# Pseudohydromys

W.B.R.

Catalog No.	Original No.	Collector	Locality <i>Netherlands New Guinea</i>	Date	Sex	Total length	Tail length	Hind Foot s. u.	Ear from Crown	Head and body
150610	5303	Archbold + Richardson	9 Km NE Lake Habbema	2700m	Oct. 31, 1938	♂ <sup>a</sup>	247	130	30	16
150612	5309	"	"	"	Nov. 1 "	♂ <sup>a</sup>	246	124	30	16
150613	5310	"	"	2800	" 1 "	♂ <sup>a</sup>	247	127	29	18
150620	5326	"	"	2700	" 2 "	♂ <sup>a</sup>	244	129	30	18
150647	5355	"	"	"	" 4 "	♂ <sup>a</sup>	246	128	30	16
150486	5112	"	"	2800	Oct. 12, 1938	♂ <sup>s.a.</sup>	245	124	30	17
150532	5174	"	"	"	Oct. 18, "	♂ <sup>s.a.</sup>	245	125	29	17



GREEN, DONALD

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# Pseudohydromys

W.B.P.

Catalogue No.	Total length	Condylor-basal length	Basilar length	Zygomatic breadth	Temporal constriction	Mastoid breadth	Nasal length	Rostral breadth, greatest	Diastema	Palatal length	Palatilar length	Incisive foramina length	Incisive foramina breadth	Greatest width outside molars	Molar row length	Molar row breadth		
150610	32.4	30.8	25.0	14.7	5.7	13.3	12.6	6.3	7.7	—	—	4.6	—	6.7	4.7	1.8		
150612	32.9	31.5	25.5	15.1	6.0	—	12.7	6.1	7.8	17.1	13.2	5.0	2.3	7.0	4.9	1.8		
150613	32.2	31.0	24.9	15.1	5.9	—	12.2	6.2	7.8	16.4	12.8	4.9	—	—	4.5	1.7		
150620	32.1	30.9	25.1	14.8	5.9	—	12.6	6.1	7.5	16.8	13.1	4.8	—	6.8	4.6	1.7		
150647	32.0	30.5	—	—	5.9	12.6	11.6	5.9	7.8	—	—	4.7	2.3	6.7	4.8	1.7		
150486	—	—	—	—	—	—	11.7	5.8	7.2	15.9	12.1	4.9	2.5	6.5	4.7	1.7		
150532	—	—	—	—	6.1	—	12.1	6.0	7.2	16.0	12.4	4.6	2.4	6.6	4.8	1.8		



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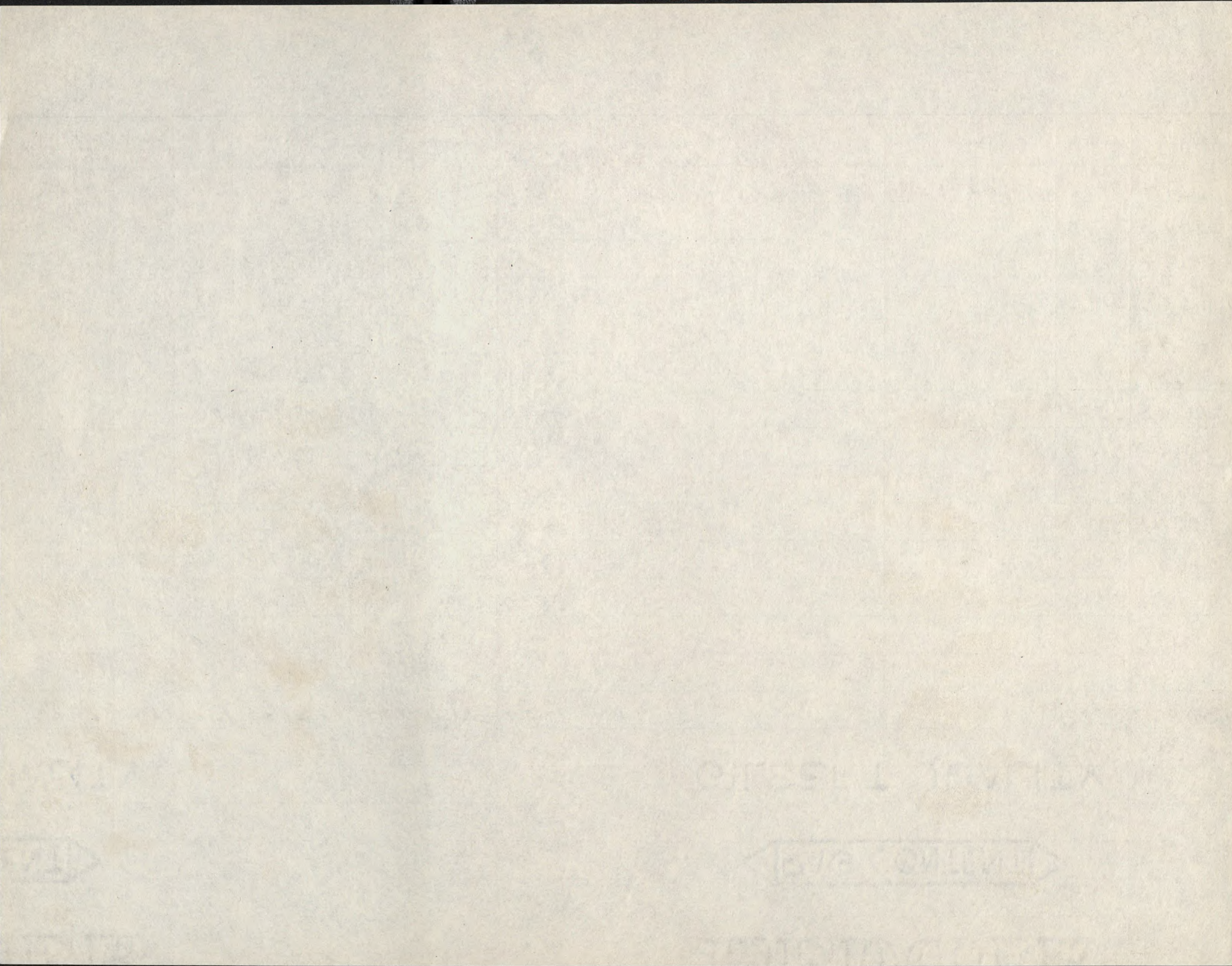


# Pseudohydromys

W.B.R.

Catalog No.	Original No.	Collector	Locality Netherlands New Guinea	Date	Sex	Total length	Tail length	Hind Foot s. u.	Ear from Crown	Head and body
150504	5131	Archbold-Richardson	9 km. NE Lake Habbema	2800m	Oct. 13, 1938	a. ♀	253	133	30	18
150516	5145	"	"	"	" 15, "	a. ♀	254	134	30	18
150522	5153	"	"	"	" 16, "	a. ♀	250	129	30	17
150545	5192	"	"	"	" 21, "	a. ♀	255	134	29	17
150546	5193	"	"	"	" 21, "	a. ♀	247	134	30	17
150581	5244	"	"	2700	" 26, "	a. ♀	246	130	28	16
150598	5276	"	"	2800	" 29, "	a. ♀	242	124	29	16
150608	5300	"	"	"	" 31, "	a. ♀	239	125	30	15
150611	5304	"	"	2700	Oct. 31, "	a. ♀	256	136	29	16
150641	5349	"	"	2800	Nov. 3, "	a. ♀	251	132	30	16
150642	5350	"	"	2700	" 3, "	a. ♀	236	122	28	16
150644	5352	"	"	2800	" 4, "	a. ♀	249	126	28	17
150651	5359	"	"	"	" 5, "	a. ♀	246	125	28	15
150567	5222	"	"	2800	Oct. 24, 1938	s.a. ♀	225	115	29	18
150580	5243	"	"	2700	" 26, "	s.a. ♀	230	120	29	17











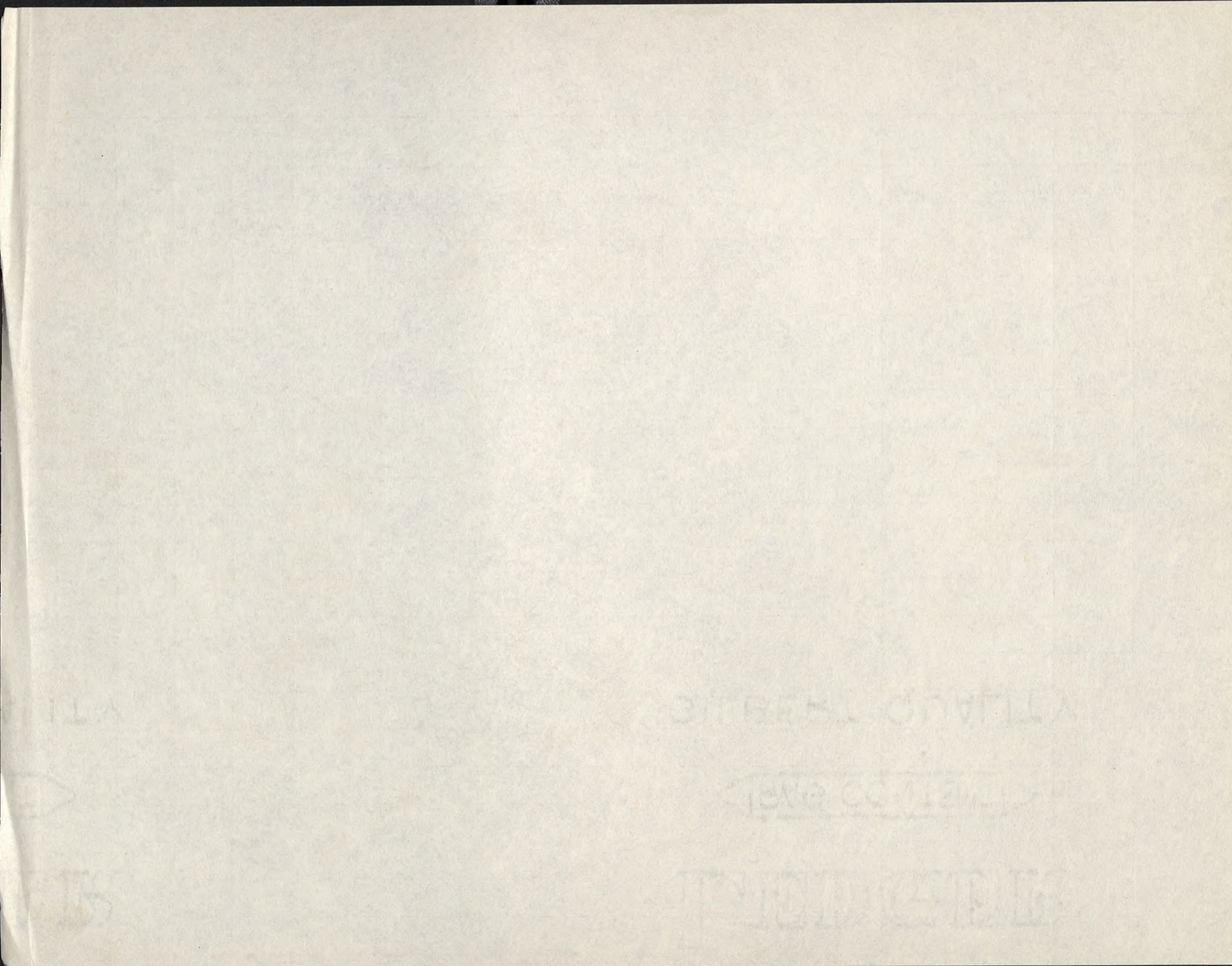
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*Pseudohydromys*

W.P.P.

Catalog No.	Original No.	Collector	Locality Netherlands New Guinea	Date	Sex	Total length	Tail length	Hind Foot s. u.	Ear from Crown	Head and Body
152088	7293	Archbold-Richardson	15 km SW Bernhard Camp Idenburg R. 1800m	Jan. 11, 1939	♂	255	134	31	14	121
152089	7294	"	"	" 11 "	♂	255	139	30	15	116
152090	7295	"	"	" 11 "	♂	251	131	30	14	120
152092	7312	"	"	" 13 "	♂	258	135	31	16	123
152094	7316	"	"	" 14 "	♂	249	133	29	16	116
152097	7353	"	"	" 17 "	♂	244	131	31	15	113
152104	7400	"	"	" 23 "	♂	246	134	29	15	112
152105	7405	"	"	" 25 "	♂	245	127	30	15	118
152106	7409	"	"	" 26 "	♂	255	136	30	15	119
152110	7428	"	"	" 29 "	♂	246	126	30	17	118
152100	7386	"	"	" 20 "	♂	250	140	31	16	110
152103	7398	"	"	" 22 "	♂	250	131	31	15	119



THE  
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HISTORY

CITIZENSHIP OF CANADA

BY THE COMMISSION

OF THE  
PROVINCE OF ONTARIO



*Pseudohydromys*

WBR.

Catalogue No.	Total length	Condylar-basal length	Basilar length	Zygomatic breadth	Temporal constriction	Mastoid breadth	Nasal length	Rostral breadth, greatest	Diastema	Palatal length	Palatilar length	Incisive foramina length	Incisive foramina breadth	Greatest width outside molars	Molar row length	Molar row breadth			
152088	31.7	30.5	24.3	15.6	5.5	12.9	11.8	—	7.6	17.6	13.2	4.5	2.2	7.0	4.5	1.7			
152089	31.6	30.0	24.0	14.5	5.5	12.6	11.7	5.5	7.5	16.9	13.0	4.4	2.2	6.7	4.7	1.7			
152090	31.9	30.7	24.4	—	5.5	—	11.4	—	7.6	17.2	13.0	4.3	2.1	6.6	4.8	1.7			
152092	32.7	31.4	25.0	—	5.7	12.7	11.7	—	8.0	17.3	13.5	4.6	2.3	6.9	4.5	1.7			
152094	32.3	30.7	24.5	—	5.8	12.5	11.8	—	7.9	17.1	13.1	4.5	2.0	6.9	4.5	1.7			
152097	32.6	31.0	24.9	14.9	5.7	12.7	11.8	5.7	8.0	17.0	13.1	4.6	2.5	6.8	4.5	1.6			
152104	31.3	30.0	24.0	—	5.6	12.5	11.1	5.8	7.7	16.6	12.7	4.2	2.1	6.5	4.5	1.6			
152105	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.5	1.6			
152106	32.7	31.0	24.5	14.6	5.8	—	11.4	6.1	7.7	17.4	13.1	4.6	2.2	6.6	4.6	1.7			
152110	31.2	29.8	23.6	14.2	5.8	12.3	11.1	5.8	7.4	16.5	12.8	4.1	2.2	6.6	4.8	1.6			
152100	—	—	—	14.5	5.8	12.4	11.0	—	—	—	—	—	—	6.3	4.5	1.6			
152103	—	—	—	—	5.8	12.4	—	—	—	—	—	—	—	6.1	4.6	1.6			



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*Pseudohydromys*

W.B.P.

Catalog No.	Original No.	Collector	Locality	Date	Sex	Total length	Tail length	Hind Foot s. u.	Ear from Crown	Head and Body
152091	7296	Archbold - Richardson	Netherlands New Guinea 15km. SW Bernhard Camp Idenburg R. 1800m.	Jan. 11, 1939	a. ♀	244	130	30	15	114
152093	7315	"	"	" 13 "	a. ♀	258	140	31	15	118
152098	7354	"	"	" 17 "	a. ♀	250	136	30	15	114
152102	7392	"	"	" 21 "	a. ♀	253	135	30	15	118
152107	7410	"	"	" 26 "	a. ♀	239	132	29	16	107
152108	7418	"	"	" 26 "	a. ♀	258	138	31	16	120
152109	7419	"	"	" 26 "	a. ♀	257	133	30	15	124
152485	skull only 7314	"	"	" 13 "	a. ♀	169	47	29	15	122
152096	7318	"	"	" 14 "	sa. ♀	240	130	31	15	110
152095	7317	"	"	" 14 "	sa. ♀	<del>326</del>	124	29	15	<del>110</del>
152099	7376	"	"	" 19 "	sa. ♀	240	130	30	15	110
152101	7387	"	"	" 20 "	sa. ♀	228	125	30	16	103



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PRODUCED BY

W. T. H. L. D. S. C.



*Pseudohydromys*

W.B.P.

Catalogue No.	Total length	Condyle-basal length	Basilar length	Zygomatic breadth	Temporal constriction	Mastoid breadth	Nasal length	Rostral breadth, greatest	Diastema	Palatal length	Palatilar length	Incisive foramina length	Incisive foramina breadth	Greatest width outside molars	Molar row length	Molar row breadth			
152091	—	—	—	—	5.7	12.5	11.1	—	—	—	—	—	—	—	4.6	1.7			
152093	—	—	—	14.8	5.8	12.8	—	—	—	—	—	4.7	—	6.6	4.6	1.7			
152098	31.4	30.1	23.9	15.0	5.7	12.6	11.2	5.7	7.6	16.8	13.0	4.4	2.3	7.0	4.6	1.7			
152102	31.9	30.8	24.8	14.9	5.8	12.8	11.7	—	8.1	17.4	13.4	3.9	2.1	—	—	—			
152107	31.6	29.9	23.5	14.8	5.8	13.0	11.4	5.8	7.3	16.7	12.8	4.2	2.2	6.7	4.5	1.7			
152108	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4.8	1.7			
152109	—	—	—	—	—	—	11.4	—	7.7	4.2	—	4.2	—	—	4.5	1.7			
152485	32.0	30.8	24.4	15.0	6.2	12.9	11.6	6.0	7.9	17.1	13.0	4.6	2.3	6.7	4.6	1.7			
152096	30.8	29.4	23.2	14.4	5.6	12.6	10.9	5.8	7.3	16.4	12.4	4.5	2.0	6.5	4.5	1.7			
152095	—	—	—	—	5.7	—	11.0	5.2	—	—	—	—	—	6.2	4.5	1.6			
152099	—	—	—	14.1	5.5	—	—	—	—	—	—	—	—	6.5	4.6	1.6			
152101	30.0	28.1	22.5	13.5	5.6	12.2	10.0	—	7.0	15.9	12.5	4.3	1.8	6.5	4.7	1.7			



ALFRED

ALFRED ALFRED

ALFRED

ALFRED ALFRED



*Pseudohydromys*

W.B.A.

Catalog No.	Original No.	Collector	Locality	Date	Sex	Total length	Tail length	Hind Foot s. u.	Ear from Crown	Head + Body
			Netherlands New Guinea							
152112	7468	Archbold + Richardson	18 km. SW Bernhard Camp Idenburg River. 2150 <sup>m</sup>	Feb. 5, 1939.	♂	253	133	31	15	120
152113	7484	"	"	" 7 "	♂	255	136	31	15	119
152114	7487	"	"	" 8 "	♂	241	125	30	16	116
152111	7458	"	"	" 4 "	♀	245	128	29	16	117
152270	7479	"	"	" 6 "	♀	263	140	31	16	123
152115	7488	"	"	" 8 "	♀	252	134	30	17	118
152116	7492	"	"	" "	♀	263	142	31	17	121



FEDERAL

REVENUE



*Pseudohydromys*

WBR

Catalogue No.	Total length	Condylobasal length	Basilar length	Zygomatic breadth	Temporal constriction	Mastoid breadth	Nasal length	Rostral breadth, greatest	Diastema	Palatal length	Palatilar length	Incisive foramina length	Incisive foramina breadth	Greatest width outside molars	Molar row length	Molar row breadth			
152112	31.5	30.3	24.0	14.8	5.5	12.5	12.1	—	7.6	17.0	13.1	4.2	2.0	6.6	4.7	1.7			
152113	31.7	30.4	24.4	15.0	5.9	12.9	11.6	6.0	7.5	17.0	13.1	4.4	2.2	6.5	4.5	1.6			
152114	—	—	—	—	—	12.7	11.6	5.9	7.8	16.8	13.0	4.5	2.2	6.6	4.5	1.7			
152111	31.3	29.8	23.8	14.7	5.6	—	11.4	6.0	7.7	16.7	12.7	4.4	2.4	6.7	4.6	1.6			
152270	31.8	30.7	24.6	14.9	6.0	13.0	12.0	6.0	7.9	17.1	13.0	4.3	2.3	6.6	4.5	1.6			
152115	—	—	23.5	15.0	5.6	—	—	—	7.5	—	12.9	4.7	2.4	6.5	4.4	1.7			
152116	Missing																		



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COMM. COMM.

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COMM.

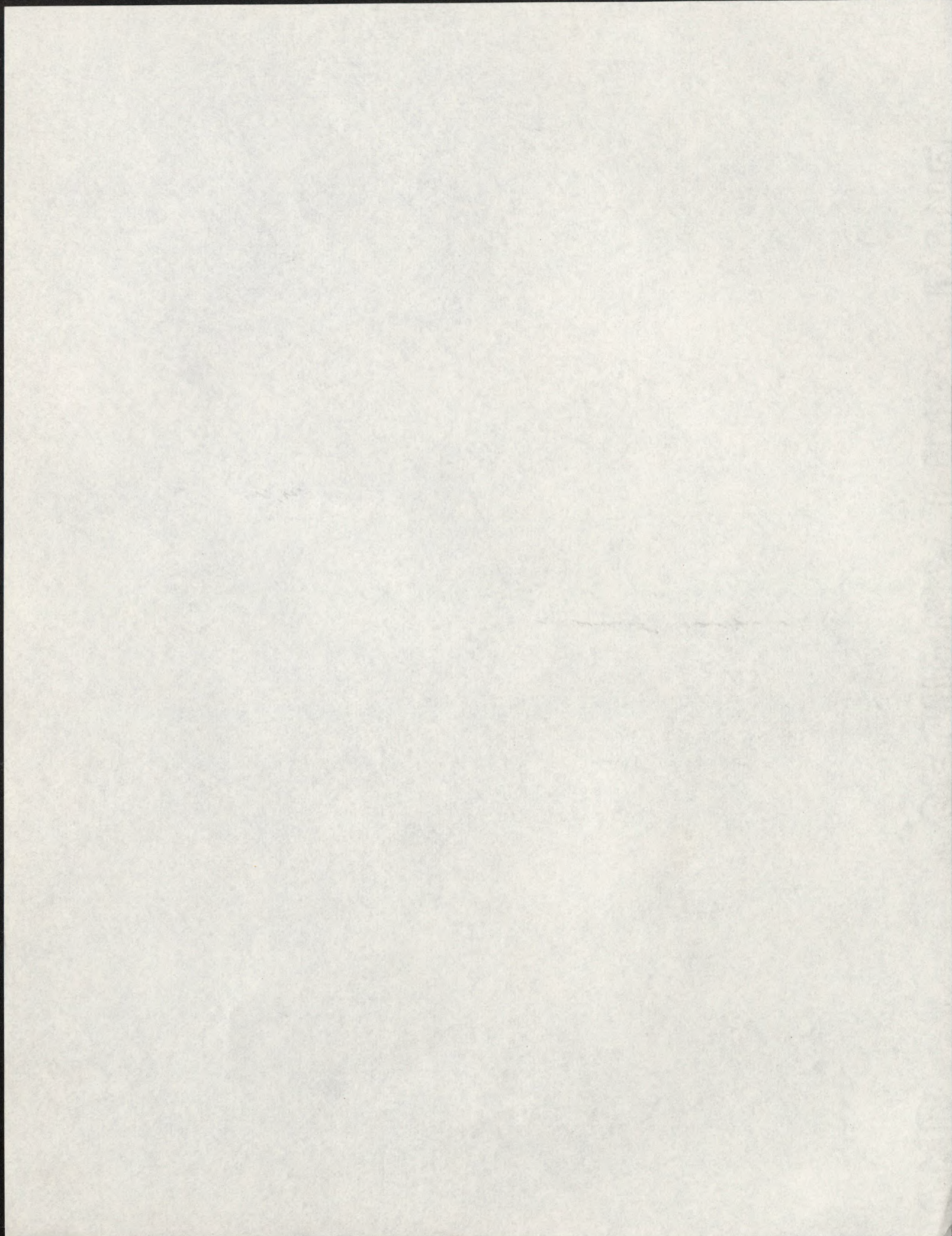
COMM. COMM.



Hydromys chrysozoster esox  
Hydromys esox Thomas Thom.

A single specimen taken from the Australas Range  
conforms closely to Thomas' <sup>(loc. cit.)</sup> original description  
and to <sup>(-)</sup> ~~Turner's~~ account of the redetermination.  
On this basis and because of the proximity of  
the Australas to Port Moresby, the type locality,  
this specimen is considered as ~~typical~~ <sup>typical</sup>. Unfortunately  
~~however~~ the animal is not a full adult as shown  
by the ~~shape of the skull and the~~ <sup>unfused</sup> pre spheroid sutures. It has,  
however, worn molar, distended scrotum and adult  
pelage which indicates it is near adult.







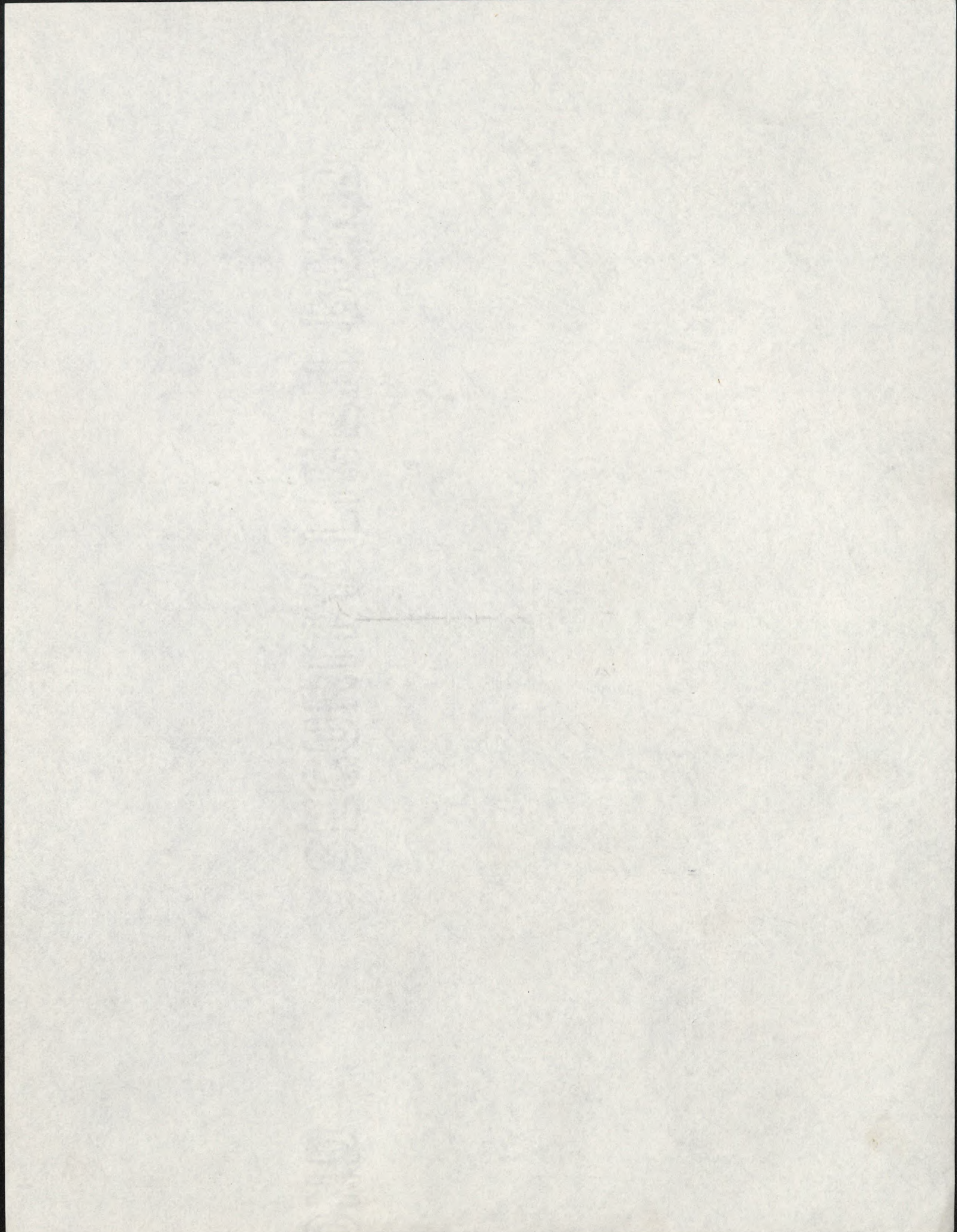
Hydromys chrysogaster illuteus

Hydromys esox illuteus Thomas

A series of 7 individuals ~~was~~ taken from Bernhard Camp and the vicinity compare closely to Thomas' description of illuteus <sup>(loc. cit.)</sup>. This camp is situated some 40 miles S E of Prauer-bivak in the same river system with <sup>a</sup> similar elevations, terrain, and vegetation. On the basis of the description and the proximity of localities these specimens are here considered ~~as~~ <sup>virtually</sup> ~~typical~~ <sup>typical</sup>.

This form was considered by Remondet (loc. cit.) as a synonym of esox principally on the assumption that the color variation of the specimen from Prauer-bivak



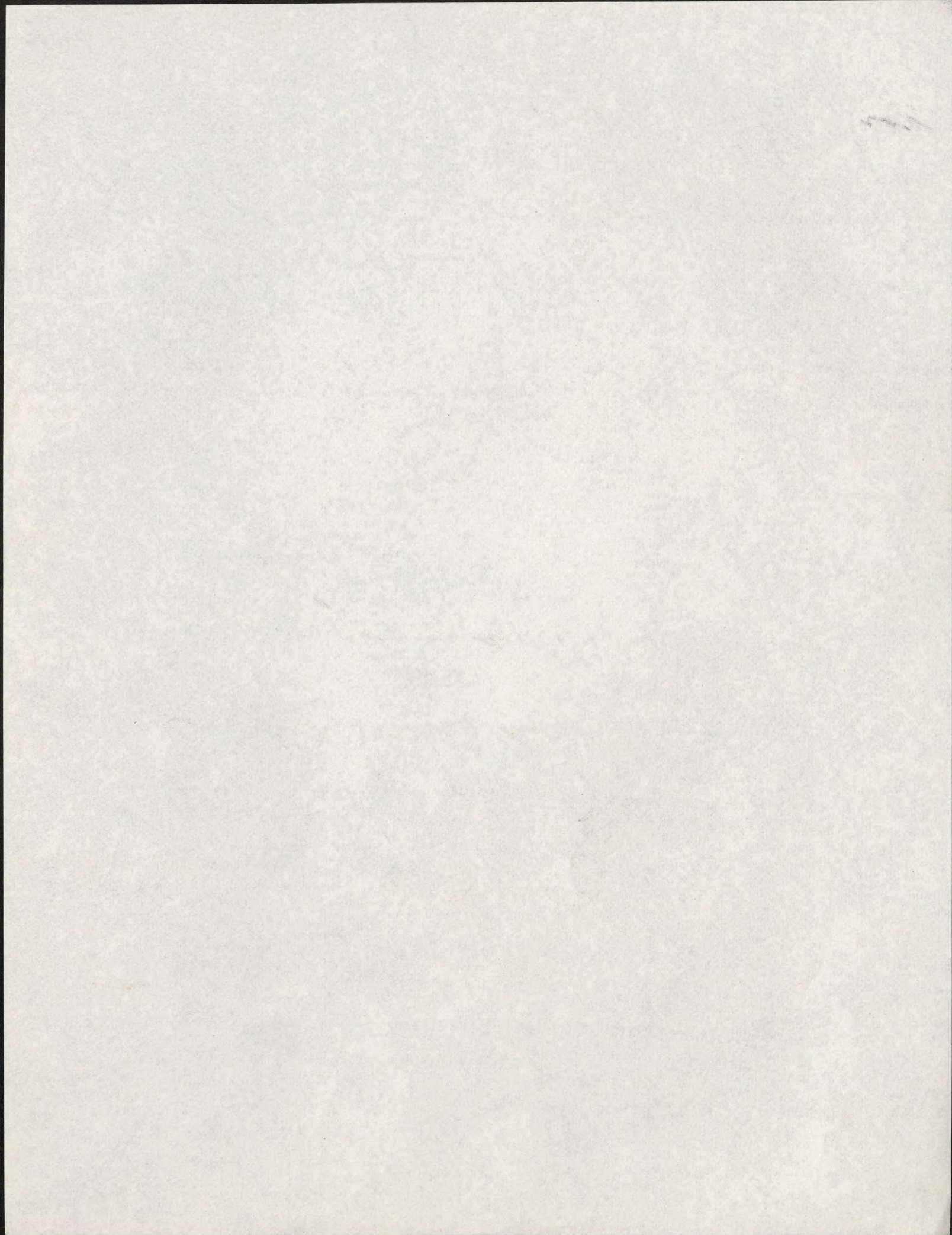




was within what be considered the range of individual variation. Although examining both types I had no series with more than three individuals from any single locality, which is hardly sufficient to make an accurate analysis of individual variation.

In the <sup>series</sup> ~~series~~ specimens from Burnford Camp (similarly in other series from the Fly River) I find that there is little individual variation when specimens in adult pelage and of similar sex are compared. On the basis of this constancy in







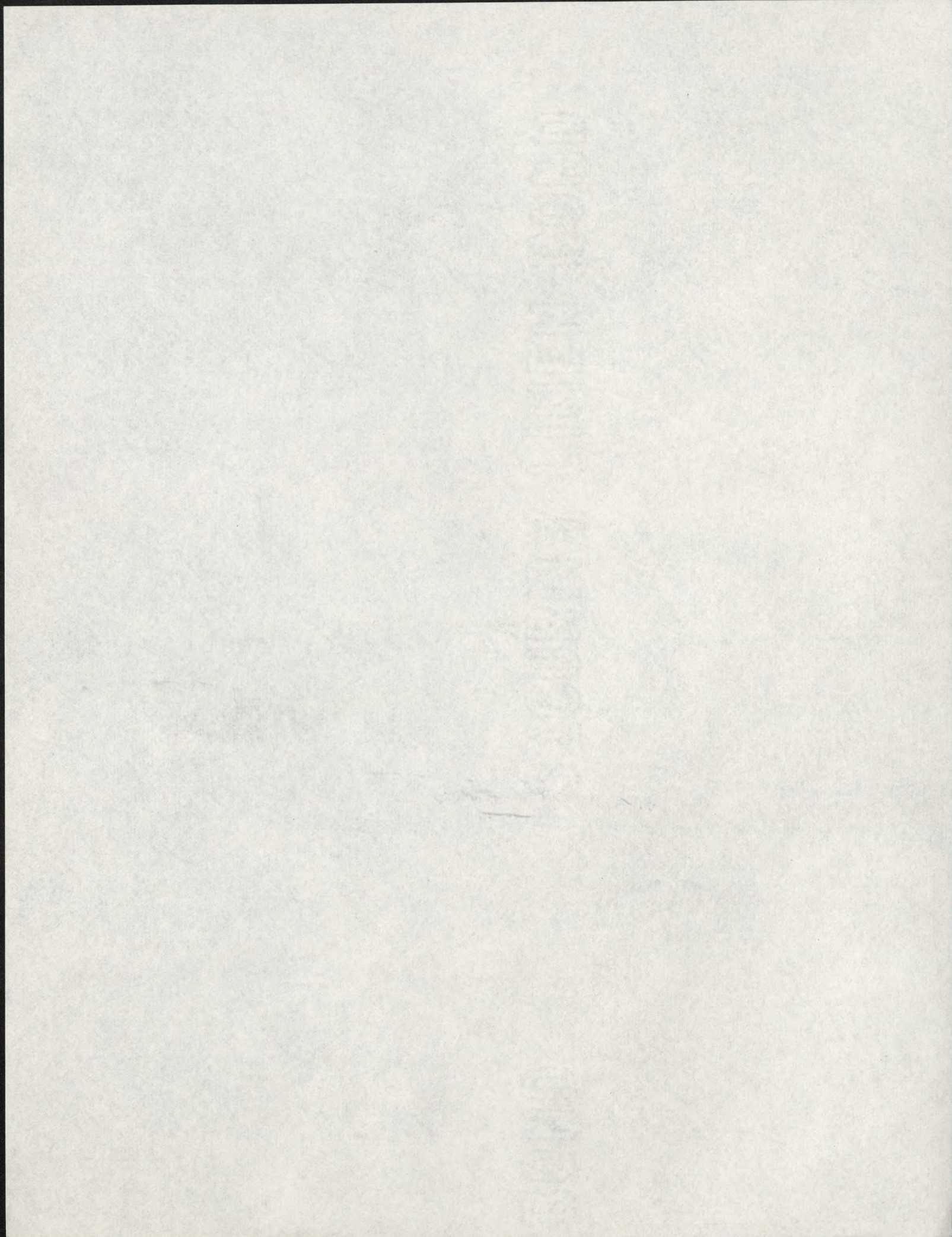
topotypical material it is apparent that Thomas name of illutus should be revived to apply to the Idunburg race of Hydromys.

Jentink (1911: p 169-176) who from his series of 7 individuals from Round [=Vicinity of] Bivak Island states

"We see \_\_\_\_\_ termininals". This <sup>is not</sup> <sub>Page 4</sub>

variation ~~in color~~ ~~is not~~ <sup>may also be</sup> due to inexactness of quoted label location. This later situation sometimes arises when specimens are purchased from natives who have obtained their catches in different regions. The skull







measurements, <sup>however,</sup> ~~actually~~ show very slight variation if #419 is considered a sub-adult. The variation in the external measurements is rather larger than one would expect from the skull measurements but if we consider that probably these specimens were prepared and labeled by "montres" (native collectors)

the variation is perhaps understandable.

~~insert sentence~~

This form <sup>illustration has been</sup> ~~is~~ compared to that of 1902 by Flower (1922: Nova Guinea Vol. 13, p. 731)

In addition several other differences are listed ~~as follows~~.

1. The cinnamon buff patch in front of the shoulder is lacking



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1950



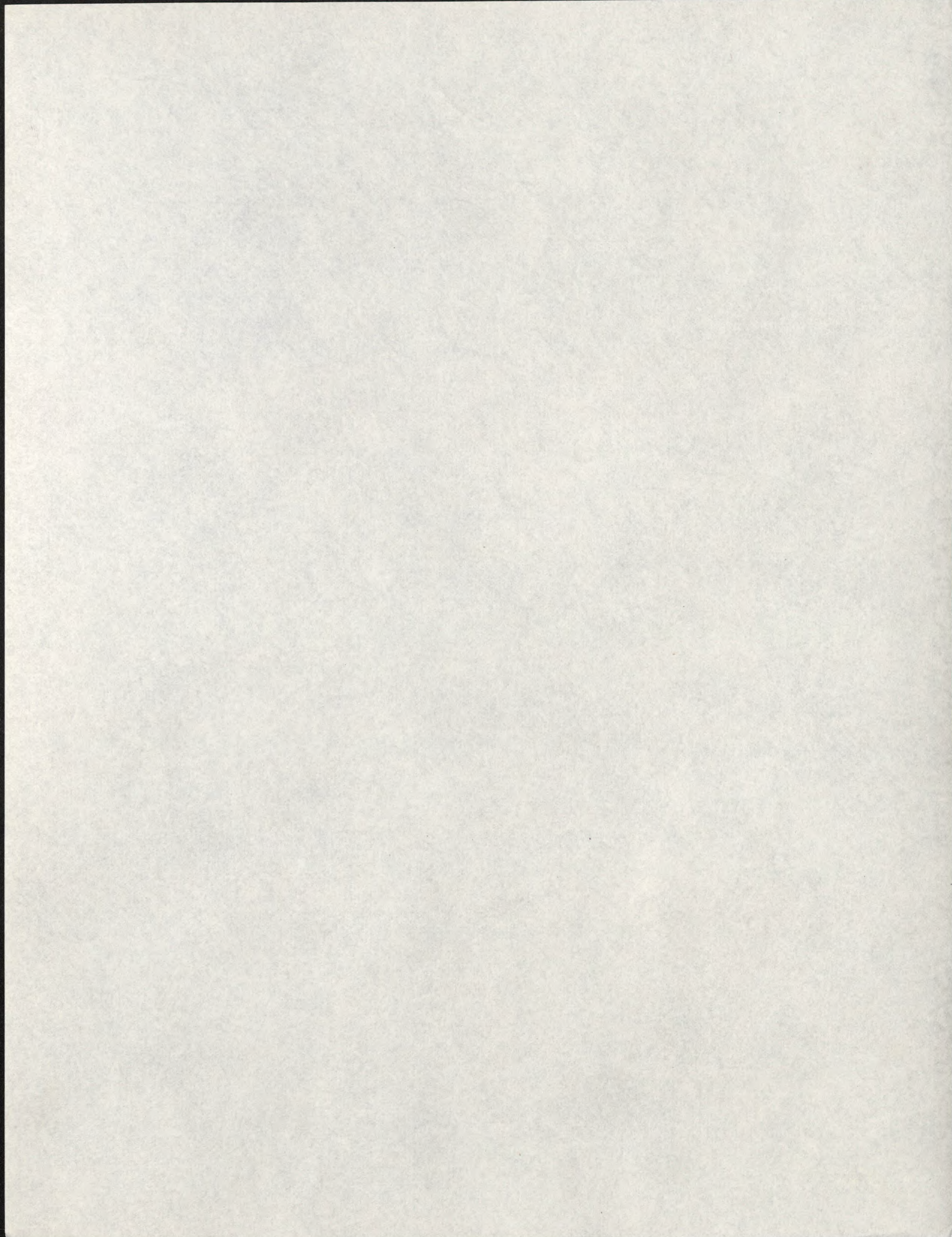
2. Dorsal-lateral half of head brown, lacking the distinct dorsal stripes extending from the 4th finger posteriorly.

3. Muzzle dark with little or no white below inacium.

4. No distinct line where white of cheeks and dark ~~top~~ of head join.

Material —







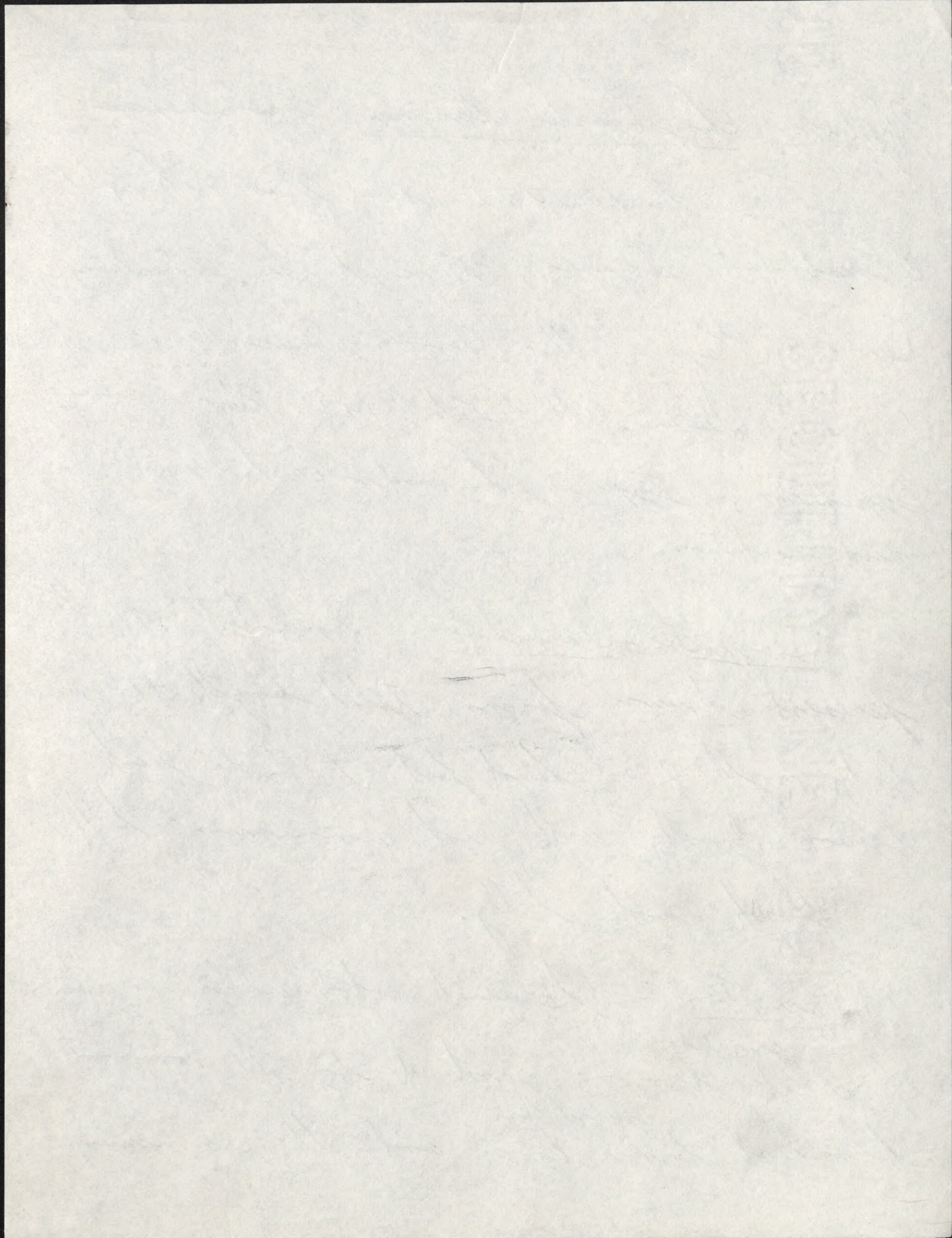
Hydromys chrysogaster tarara *new sub-species*

Type - No 105782 Amer. Mus. Nat. Hist.;  
♂ subadult; Tarara, Wasi Kussi, Western  
Division, Papua, New Guinea; December 12,  
1936; collector G.H.H. Tate, 1936 New Guinea  
Expedition; Type is skin ~~and~~ with skull in  
good condition.

Diagnostic characters - Smallest of the  
present known forms, total length 415,  
body length 210, hind foot 47. Color dark  
brown dorsally with rich cinnamon buff  
on flanks and belly. Skull small.

Description - General color above is that  
of dark <sup>grizzled</sup> brown produced by the dominant  
blackish brown <sup>guard hairs</sup> tips and the cinnamon







buff sub terminal bands; darkest  
 on head from the rinarium to nose  
 of neck, shoulder ~~slightly~~ lighter, darkening  
 gradually toward rump; sides lighter  
 due to increasing width of <sup>the</sup> cinnamon  
 buff guard hair band; dorsally the  
 light <sup>gull</sup> gray underfur is almost  
 obscured by the cinnamon buff tipped  
 guard hair; tail blackish brown  
 with white tips of 55 mm; hind  
 feet sparsely covered with short fusus  
 hair, lighter laterally; front feet fusus  
 black with thin light colored lateral  
 stripe running to 5th finger; ear  
 dark, sparsely dotted with hair; ~~is~~



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front of shoulders a cinnamon buff patch. Skull <sup>small</sup>; rostrum short, tapering; binocular inflated; ~~zygomatic breadth~~ ~~but~~ ~~diastema~~ short; ~~upper jaw~~ of the genus but ~~much reduced in~~ short, narrow; incisive foramina and interorbital constriction ~~size~~ (see measurement) normal.

Measurements of type \_\_\_\_\_

Comparisons - Compared with esox

and illutus in size smaller. Skull small with short tapering rostrum; zygomatic breadth narrow; temporal constriction proportionally broader; brain case smaller. In color dorsally tinged with cinnamon buff; flanks, belly and cheeks with the cinnamon buff ~~color~~ more intensified; front feet



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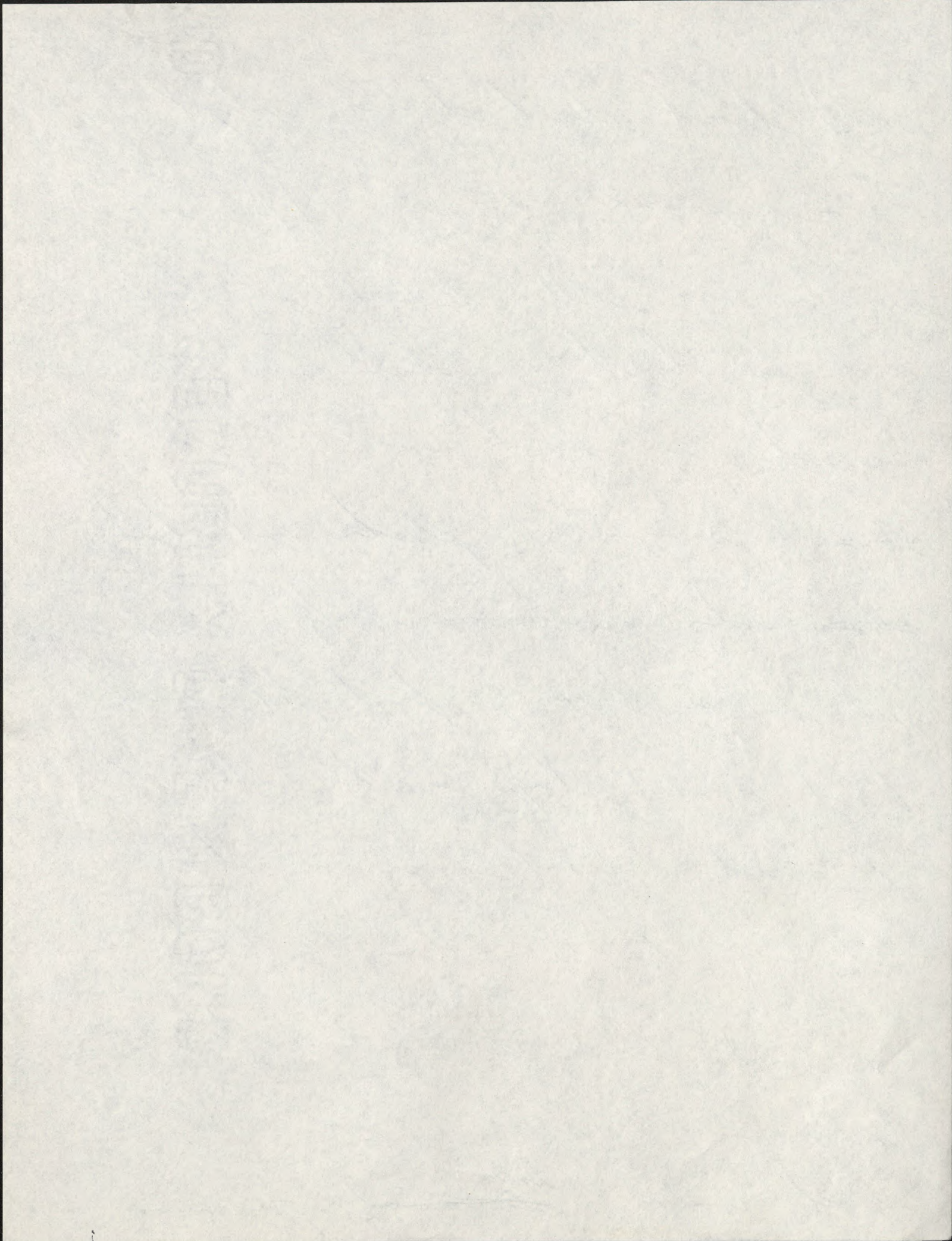


with broad dark dorsal stripes.

From papuaena, tarara differs in smaller size with shortened body, tail, and foot length. Skull in all respects is much smaller. Color dorsally similar; flanks and belly ~~strong~~ richer cinnamon buff; hind feet fuscous brown; front feet with broad dorsal stripes rather than the thin well defined narrow stripes extending to the 4th and 5th digits.

Compared with description of moae (Banks Islands) size is smaller, Skull much smaller; <sup>inversis</sup> ~~palatal~~ foramina







longer and broader; interorbital  
constriction narrower; molar row  
shorter. Color dorsally darker.

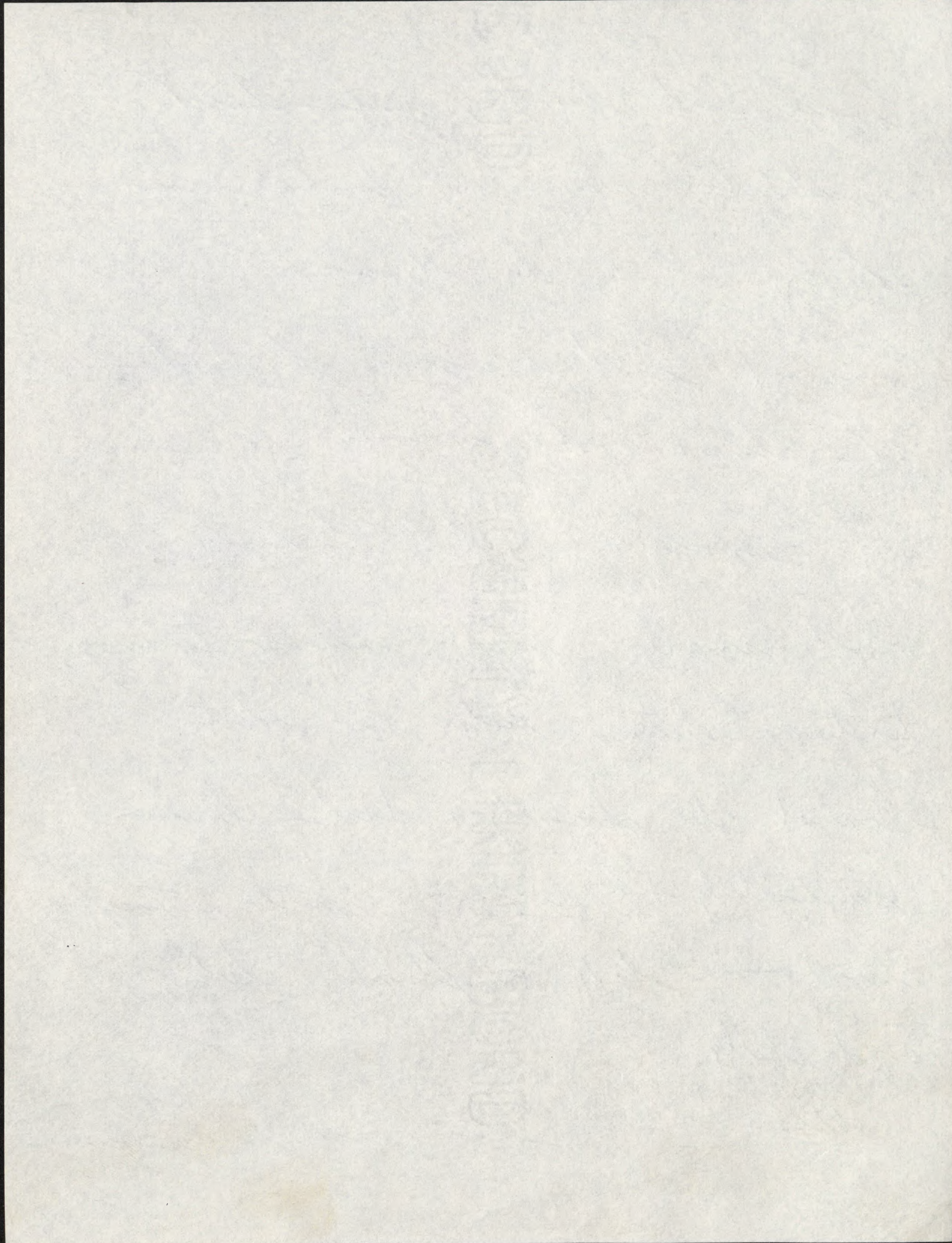
Compare with description of nauticus  
(Am Islands) and buccarii (Kei Islands)  
size smaller; shorter hind feet.

Skull small; rostrum narrow tapering;  
diastema shorter; molar row shorter.

General color dorsally a darker brown,  
particularly in buccarii; more intensified  
cinnamon buff on flanks, cheeks,  
and belly.

Remarks — There are 10 specimens







from the middle Fly River region  
 which are very similar to toros.  
 The individual from Gaima is a  
 juvenile so nothing can be said  
 of its affinities. The <sup>other</sup> 3 specimens  
 from Start Island and the 6  
 from Lake Davumbu differ from  
 the type in being somewhat larger  
 in external and skull measurements,  
 and with slightly less cinnamon  
 buff color on flanks and belly,  
 in these respects approaching the  
 upper Fly River form.



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In Peters description (Annali del  
 Museo Civico di Storia Natural  
 di Genova Series 1 vol 14 1880-81  
 p 705-6) of beccarii he records  
 a single specimen from the Fly  
 River which is probably of this form.

Material -



STANDARDIZATION BOARD



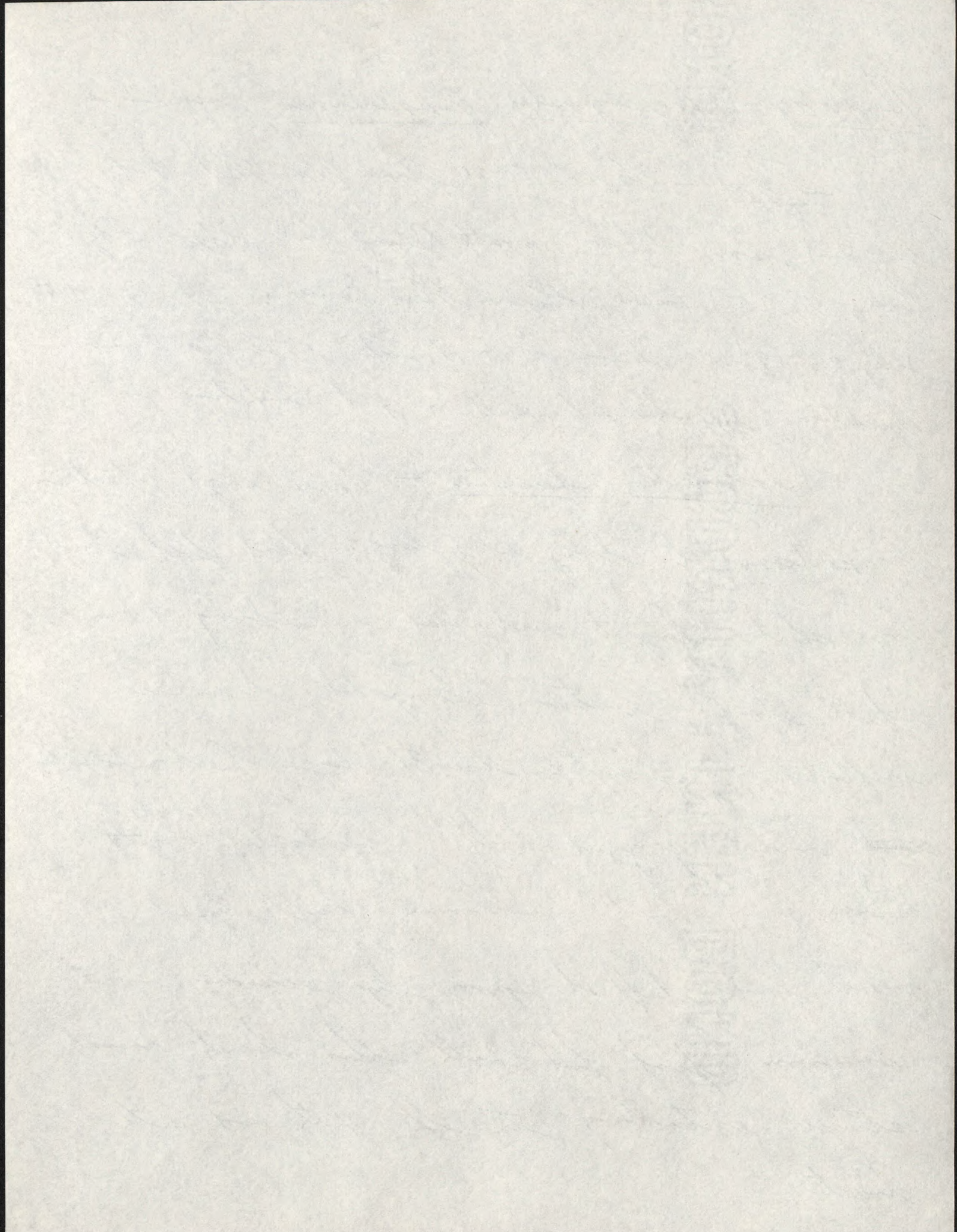
Hydromys chrysogaster papuana *new sub sp.*

Type - No. 105201 Amer. Mus. Nat. Hist.;

♂ adult; 1 mi. below mouth Black River, Upper Fly River, Western Division, Papua, New Guinea; alt 100 meters; July 25, 1936. collector G. H. H. Tate, 1936 New Guinea Expedition; type skin and skull in good condition.

Diagnostic characters - Large size; tail in proportion to body very long; hind foot long; ear short; longest vibrissae exceeding 90 mm. Skull large; rostrum elongated; brain case inflated; zygomatic breadth long. Color dorsally ~~dark~~ brown grizzled buff; ventrally ~~light~~ <sup>pale</sup> ~~gray~~ <sup>gray</sup> with cinnamon buff tipped guard hairs; buff of upper lip extending up to vivarium; front feet with thin dark dorsal stripes extending to the 4th and 5th digits.

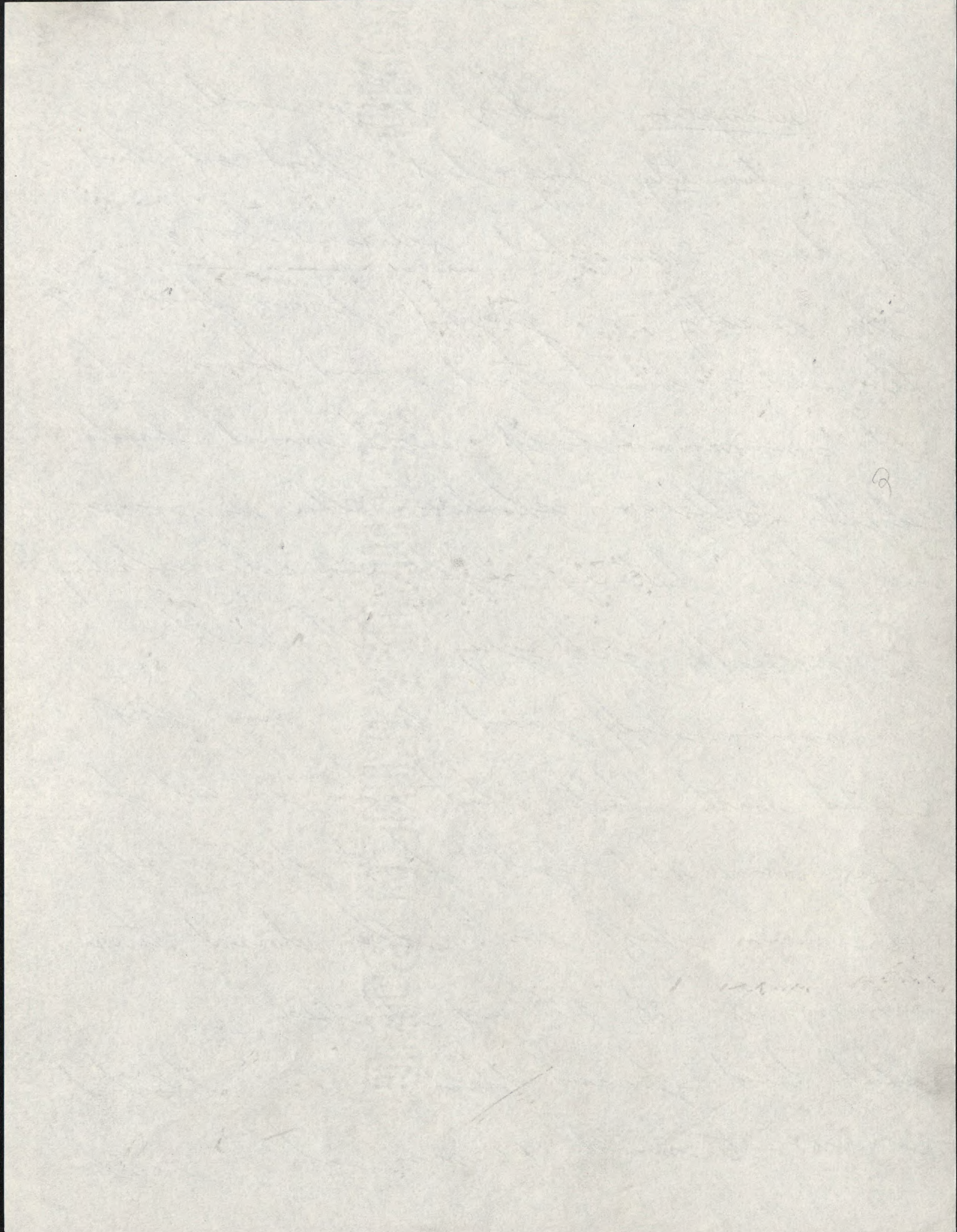






Description - Size large with proportionately long tail; front and hind feet large; ears short; vibrissae long.  
 Color dorsally is a grizzled brown formed by the fuscous black tipped guard hairs and the cinnamon buff subterminal bands, slightly lighter over shoulders than on wings and head; laterally lighter in color shading to a light gull gray belly with cinnamon buff guard hair; hind feet clothed with short white hair except for brown colored first digit; front feet light cinnamon buff with thin dorsal stripe running to the 4th and 5th toes; ear short haired fuscous black; tail blackish brown, terminal 180 mm white; patch







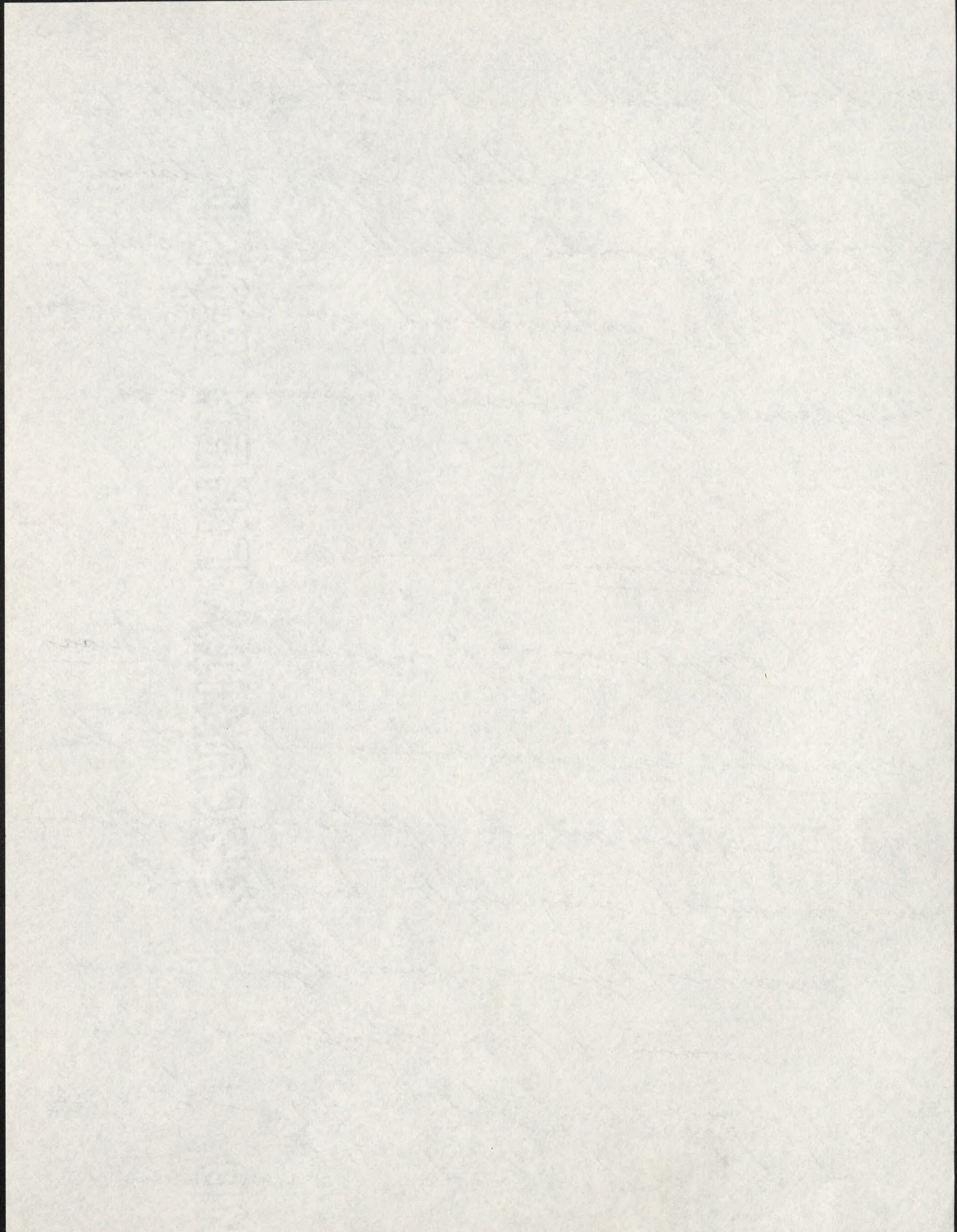
in front of shoulders and another on cheeks light  
 cinereous buff. Skull large; rostrum  
 elongated; zygomatic breadth broad; palatal  
 length long; inter orbital constriction broad;  
 diastema long; incisive foramina large;  
 nasils long.

# Measurements —————

Comparisons — Compared with taraca,

papuana is readily distinguished by its larger  
 size; longer tail and hind feet. Color differences  
 less pronounced being lighter dorsally with  
 less prominent fuscous black tipped guard  
 hairs; cinereous buff on flanks and belly  
 less intense; hind feet nearly white; ~~thin~~  
 front feet with thin dark dorsal stripe.





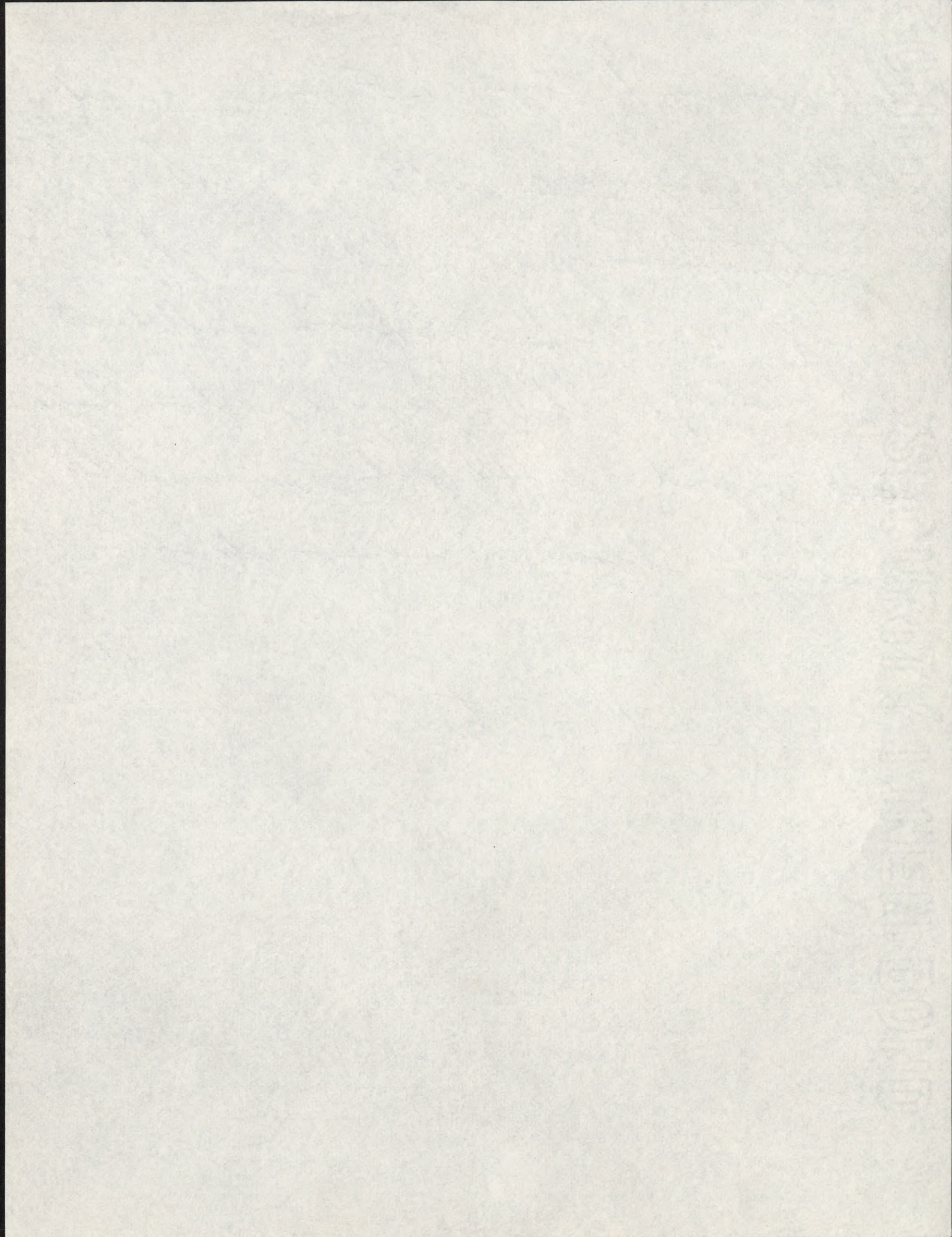


4

Skull very much longer. From esox and illutus, papuanus differs in having a <sup>comparatively</sup> ~~proportionally~~ longer tail; hind feet larger; Colo ~~richer cinnamon~~ buff dorsally and ventrally. Skull larger; rostrum longer; ~~width~~ zygomatic breadth greater; infraorbital constriction broader; incisive foramina larger.

Material - type.







Neohydromys

Mixed color phases ♂

W.B.R.

Catalog No.	Original No.	Collector	Locality <i>Netherlands New Guinea</i>	Date	Sex	Total length	Tail length	Hind Foot s. u.	Ear from Crown	Color Light Phase	Color Dark Phase
110070	4834	Archbold & Richardson	Lake Habbema 3225	Aug. 27, 1938	♂	345	184	37	10	X	
110050	4682	"	" "	" 12, 1938	♂	341	187	39	9	X	
110067	4813	"	" "	" 24, "	♂	340	187	37	9	X	
110060	4752	"	" "	" 20, "	♂	337	182	37	9	X	X
110061	4753	"	" "	" 20, "	♂	331	185	37	8		X
110078	5071	Measured by collector	7 Km. NE Wilhelmina top 3560	Sept. 24, "	♂	329	167	36	(6)		X
110054	4721	"	Lake Habbema 3225	Aug. 18, "	♂	328	173	37	8	X	
110056	4723	"	" "	" 18, "	♂	327	174	36	9	X	
110051	4701	"	" "	" 14, "	♂	322	166	36	8		X
110071	4835	"	" "	" 27, "	♂	322	175	37	8		X
110055	4722	"	Lake Habbema	" 18, "	♂	317	170	36	9	X	
110073	4844	"	" "	" 28, "	♂	317	171	36	8		X
110074	4848	"	" "	" 29, "	♂	312	160	35	9	X	
110052	4702	"	" "	" 14, "	♂	305	161	37	9	X	
110069	4824	"	" "	" 25, "	♂	300	156	35	8		X
110062	4765	"	" "	" 21, "	♂	295	149	33	10		X
110068	4814	"	" "	" 24, "	♂	294	145	36	8		X
110057	4724	"	" "	" 18, "	♂	285	146	34	8	X	
Average of 16?			adults								
			To be saved for checking.								



121

1855

NEW YORK

FREDERICK

122

123

ADAMANTINE



Neohydromys*Mixed color phase ♀*

W.B.R.

Catalog No.	Original No.	Collector	Locality Netherlands New Guinea	Date	Sex	Total length	Tail length	Hind Foot s. u.	Ear from Crown	Color Light Phase	Color Dark Phase
110053	4713	Archbold + Richardson	Lake Habbema	3225 Aug. 16, 1938	♀	350	190	38	9	X	
110049	4592	"	"	" 5, "	♀	337	184	36	9	X	
110058	4725	"	"	" 18, "	♀	316	164	35	8	X	
110076	4858	"	7 Km. NE Wilhelmina top	3600 Sept. 8, "	♀	313	160	35	7		X
110059	4726	"	Lake Habbema	3225 Aug. 18, "	♀	308	169	35	8	X	
110072	4836	"	"	Aug. 27, "	♀	305	162	35	8		X
110064	4786	"	"	" 22, "	♀	295	161	35	8	X	
110077	5055	Measured by collector	7 Km. NE Wilhelmina top	3560 Sept. 23, "	♀	290	154	35	8		X
110065	4787	"	Lake Habbema	3225 Aug. 23, "	♀	277	145	34	8	X	
110079	5085	Measured by collector	7 Km. N.E. Wilhelmina top	3560 Sept. 27, "	♀	274	130	35	8		X
110063	4766	"	Lake Habbema	3225 Aug. 21, "	♀	273	143	33	8	X	
110048	4585	"	"	" 4, "	♀ <sup>Subad?</sup> Juv.	209	100	30	7		X
110066	4798	"	"	" 23, "	♀ <sup>Subad?</sup> Juv.	190	90	27	6		X

*To be saved for checking*



GENERAL OFFICE

1900

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1872

W. H. WOOD

1872

W. H. WOOD



Leptomys ernstmayri

W.B.R.

Catalog No.	Original No.	Collector	Locality Papua, Central Division	Date	Sex	Total length	Tail length	Hind Foot s. u.	Ear from Crown	Head and body length
108449	3520	Archbold + Tate	Sogeri 450 <sup>m</sup>	Feb. 5, 1937	♂	308	151	40	22	157
108452	3691	"	Kagi, Kokoda Rd. 1500 <sup>m</sup>	Mar. 9, "	♂	267	143	35	19	124
108451	3690	"	" "	Mar. 8, "	♂	255	141	35	19	114
108450	3666	"	Sogeri, Astrolabe Range 410	Feb. 28, "	♀	315	125	40	21	190
108447	3581	"	Baruari rest house, Astrolabe Range 520	Feb. 13, "	♀	302	143	38	19	159
108448	3621	"	" " "	Feb. 19, "	♀	278	132	37	18	136
104199	1586	Archbold	Mafulu 125 <sup>3</sup>	Nov. 7, 1933	♂	306	154	40	17.9	152
104200	1605	"	" "	Nov. 14, "	♂	305	160	40	23	145



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Missing Skulls

152077 - Hydromys hysogaster.

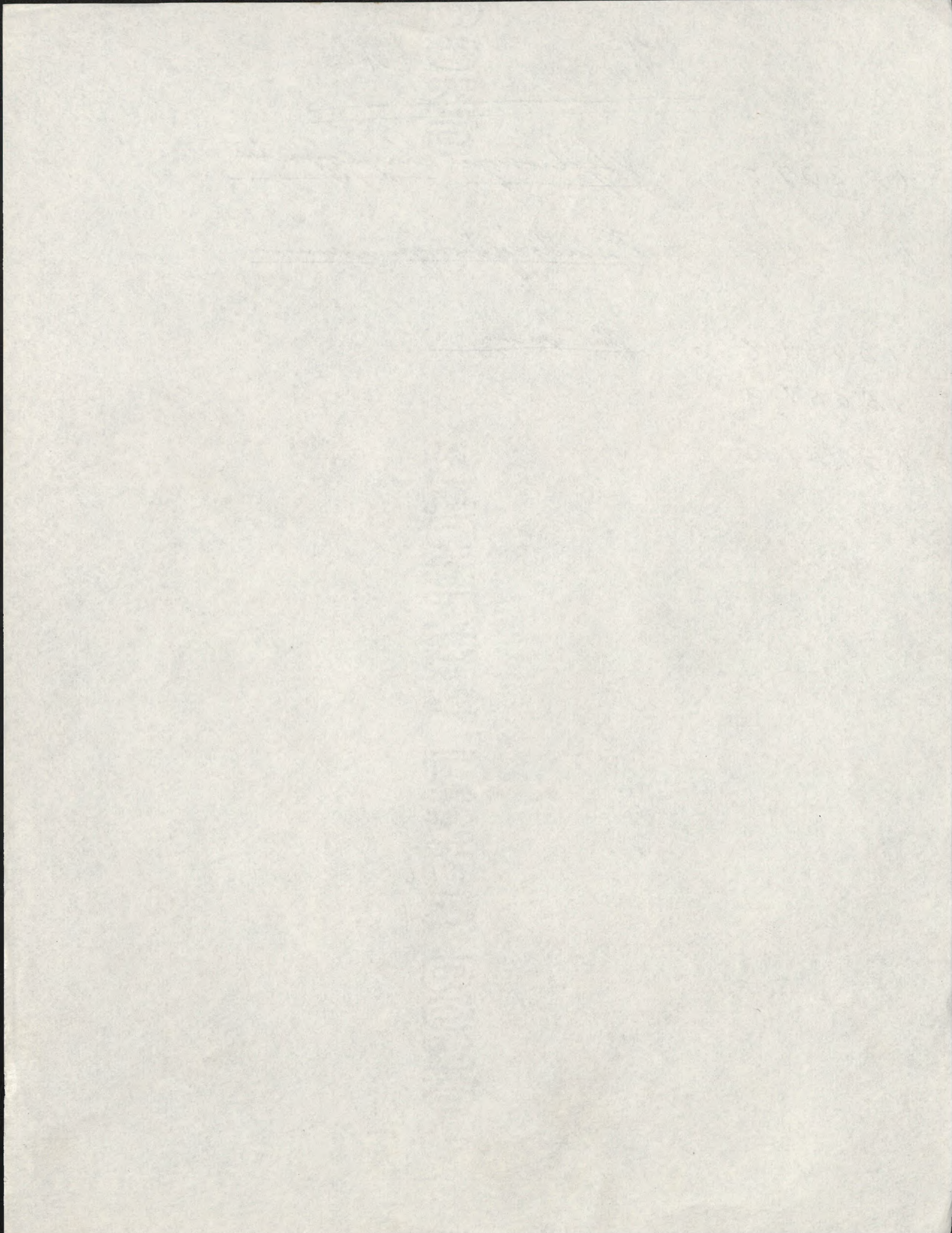
110326 - Pseudohydromys minimus.

150598 - New species.

150579 - "

152116 - "







Look up Hydromys oriens

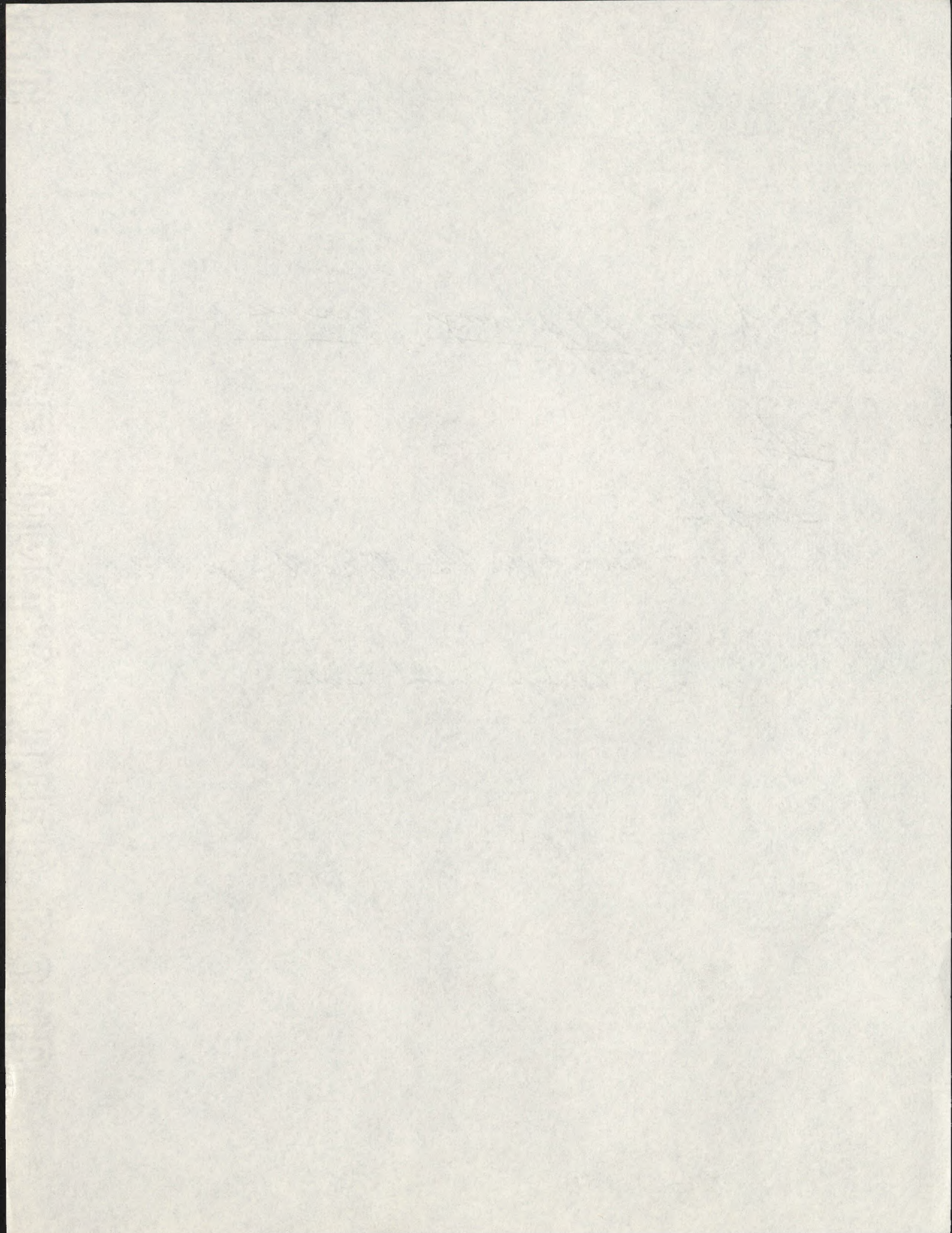
The

Tongton

1937 Rec. of Aus. Mus. V 20 Pl. 2 p 127

In card catalogue (original description)







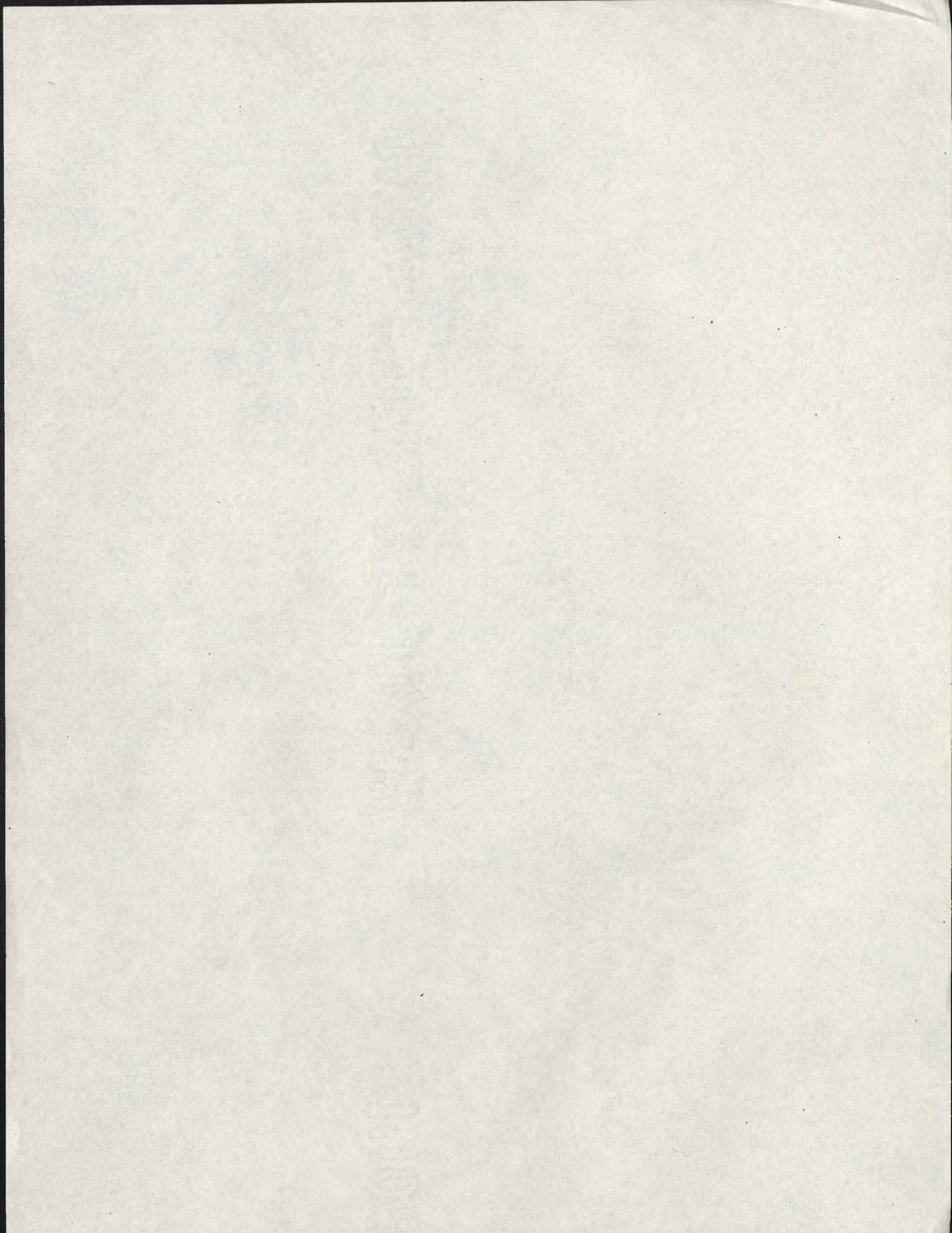
Hydromys

Neohydromys

Pseudohydromys

Leptomys







# Plan of Procedure

~~RESULTS OF THE ARCHBOLD EXPEDITION S. NO.?~~  
Tital New Hydromine Rodents from New Guinea.

Introduction

Hydrominae

Distinguishing characters

~~List of Genera~~

Comment on Rummels syn.

— Neohydromys new Genus

Type of the Genus Neohydromys archboldi

Diagnosis characters

Remarks (see chart)

~~Measurements (see chart No. 2)~~

Neohydromys archboldi new sp.

Type —

Description (including external and skull characters)

Measurements of type (See chart No. ? Specimen No. ?)

List of material

Other Genera - Hydromys, Pseudohydromys

Type citation

Material

Measurements <sup>(see chart)</sup> Comments

Comparison of Genera Table



1870

1871

1872

1873

1874

1875

1876

1877

1878

1879

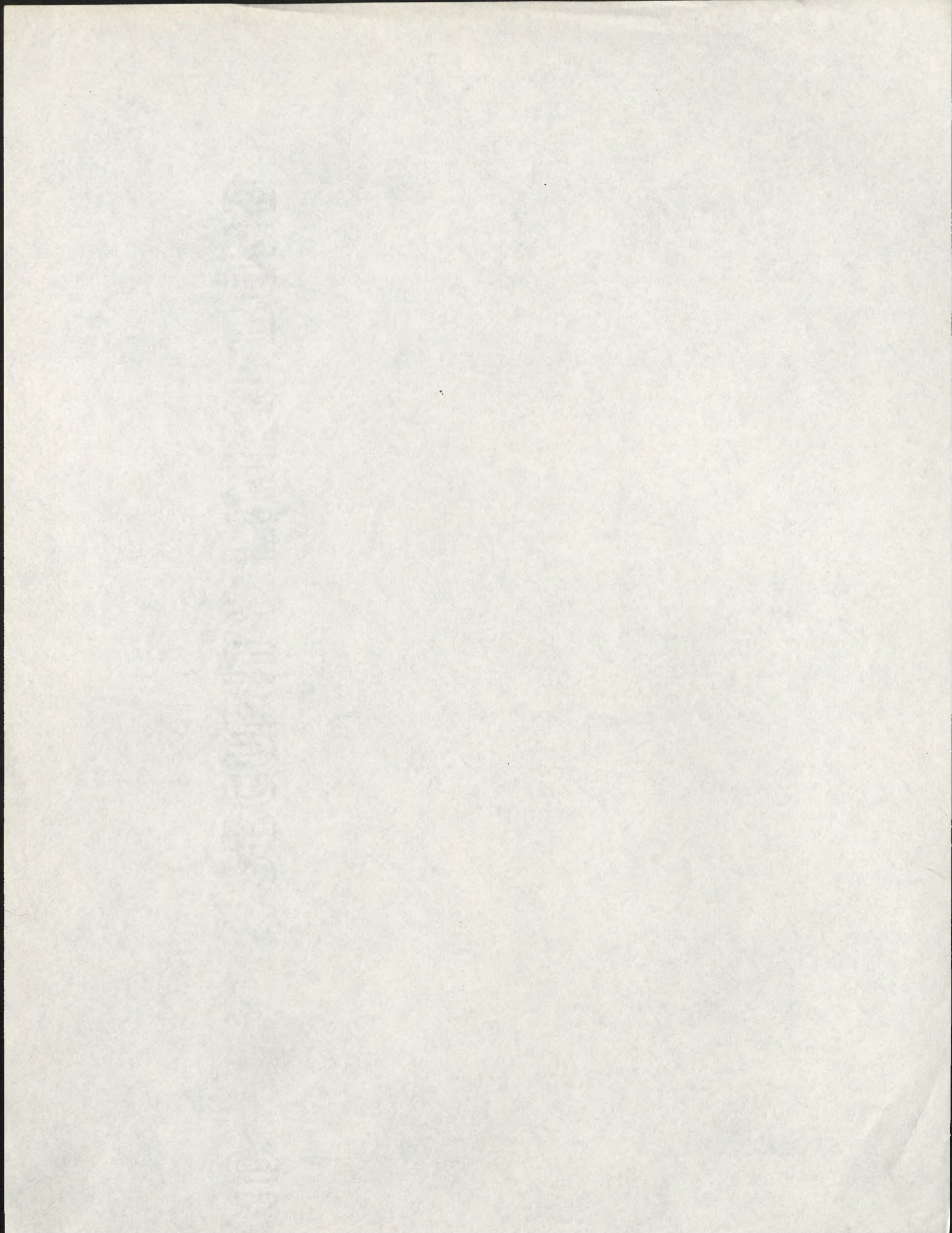


## Introduction

This paper deals with the New Guinea  
Hydromys Rodents which were taken on  
the Archbold 1938-1939 Expedition  
(Indisch Americkaansche Expeditie) under the  
auspices of the American Museum of  
Natural History.

The region worked was that of the  
north slope of the Snow Mountains  
from an elevation of 4000 m. down  
to 1600 m.; ~~and~~ the mid Idenburg  
slope from 2100 m. to the Idenburg  
River an elevation of 60 m.; and ~~at~~  
Hollandia on the north coast. (See Road —)





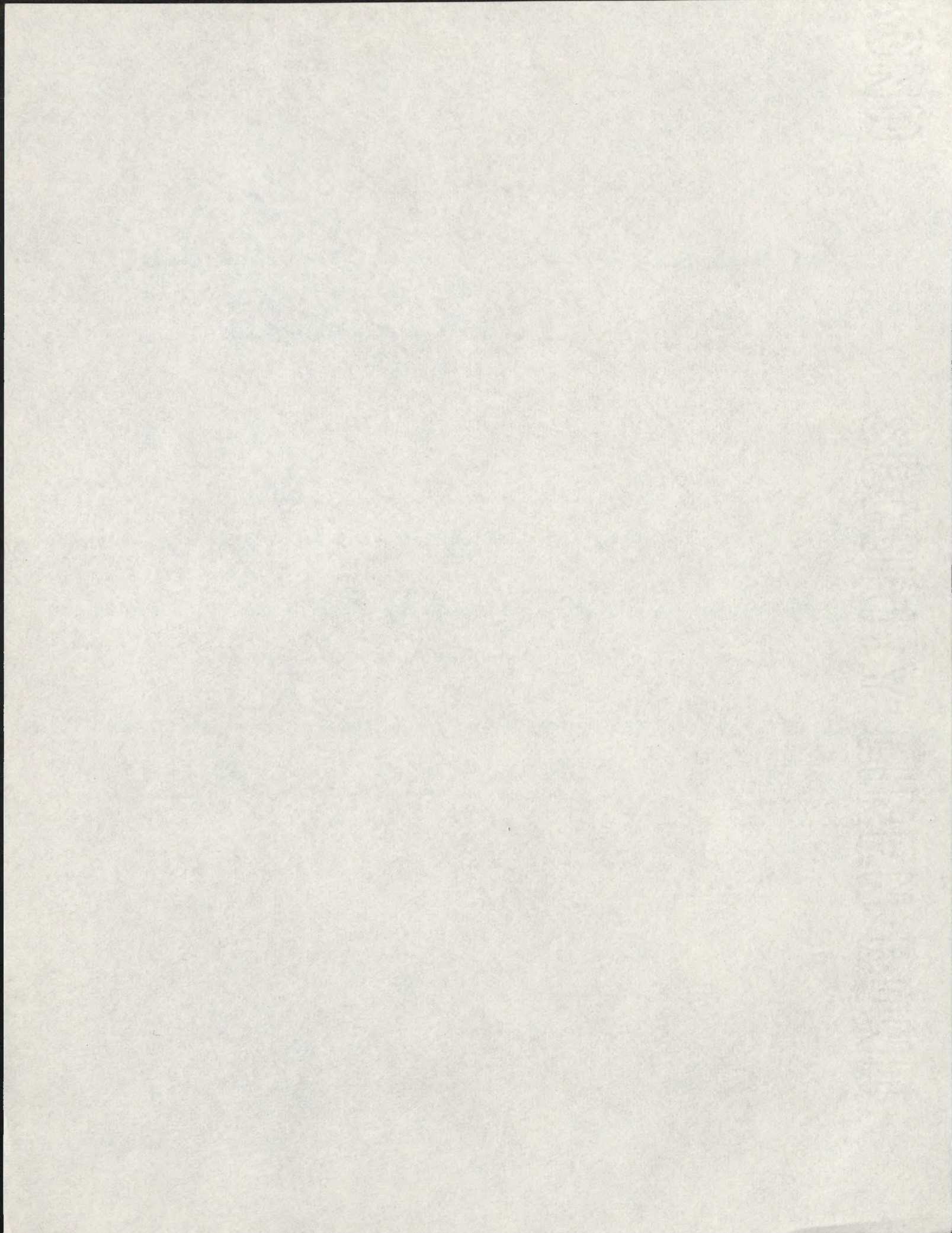


## Introduction (continued)

Here a comprehensive study and collection of mammals was made, the Hydromirine groups of which is here dealt with <sup>in the region</sup> ~~in this paper~~.

The purpose of this treatise is to clarify the sub-family; to describe new genera and species, and to compare other members of the <sup>New Guinea</sup> Hydromirinae which were taken during the expedition.





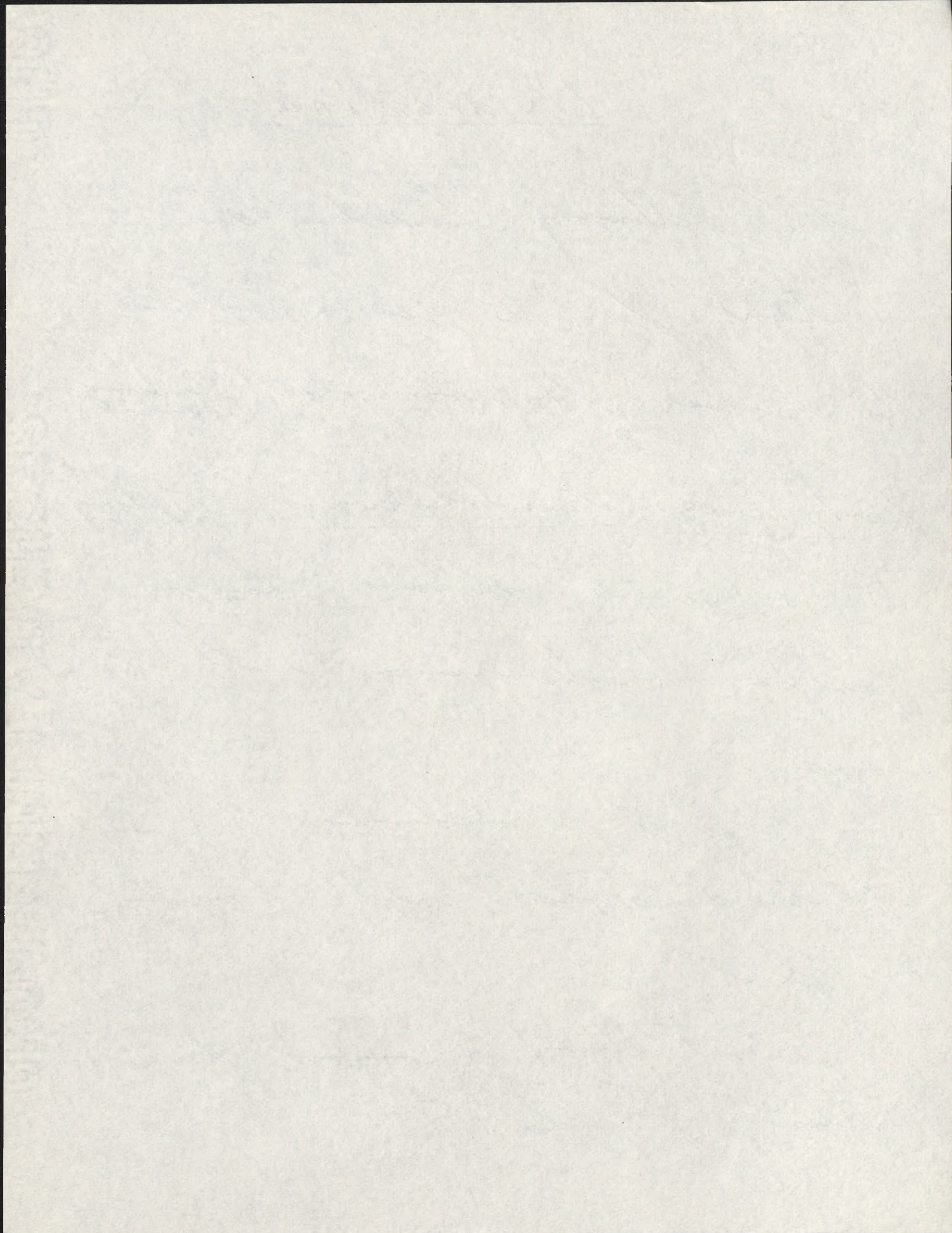


## Hydrominae

The following characters are constant for the genera of New Guinea Hydrominae (Hydromys, Neohydromys, Pseudohydromys, Leptomys)

1. Simple molars having basin-like depressions with raised edges.
2. Loss or reduction in size of third molar, and elongation of first.
3. Flattened or concave dorsal outlines of skull.







4. Constriction of intertemporal region.

5. Rounded infraorbital canal.

The two genera Crossomys and Parahydromys previously referred to in this group have been included in the genus Hydromys by Hans Rümmler. (Die Systematik und Verbreitung der Muriden Peruginas, Mitt. Zoolog. Mus. Berlin, 1938, Band 23, Heft 1, p. 17.)



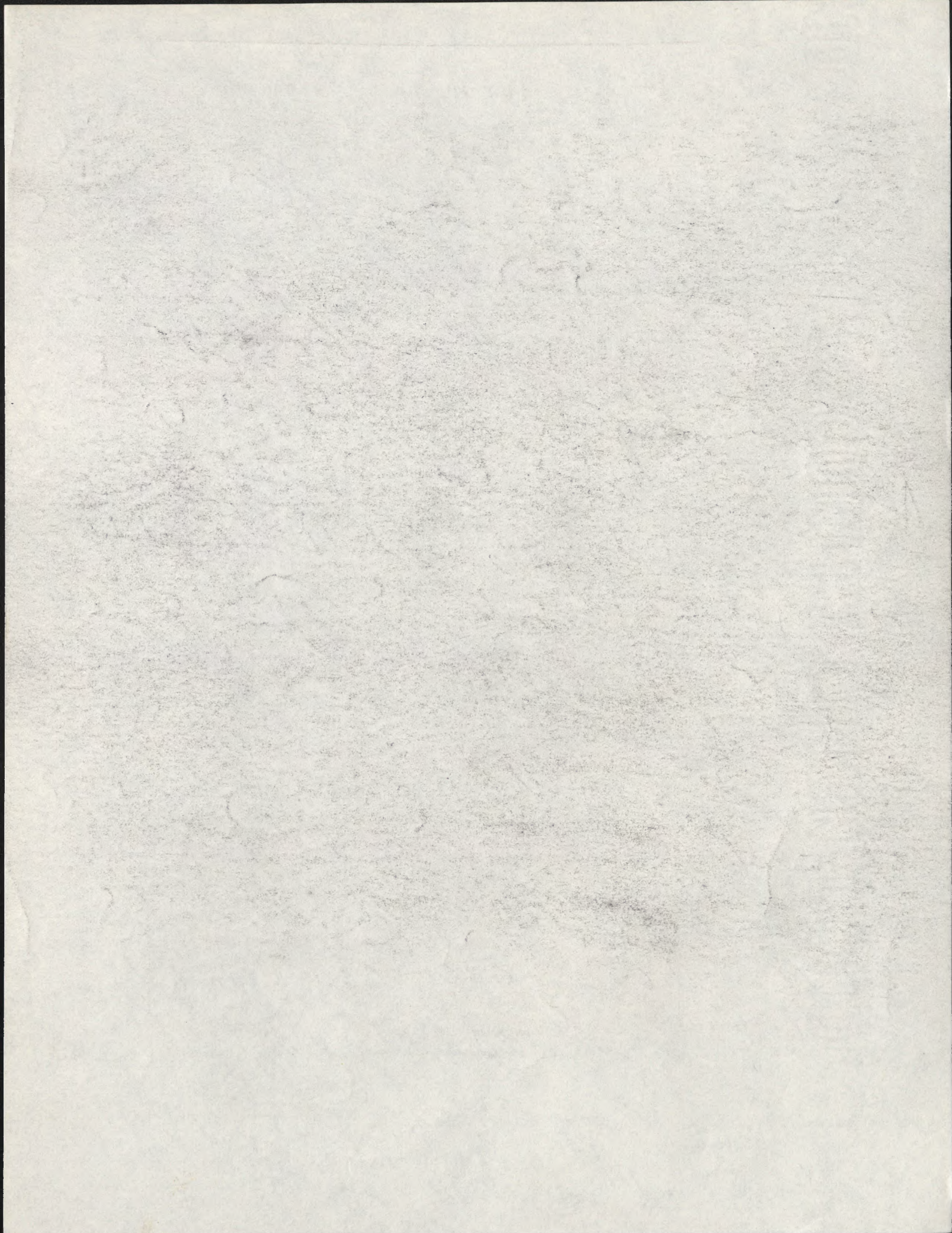
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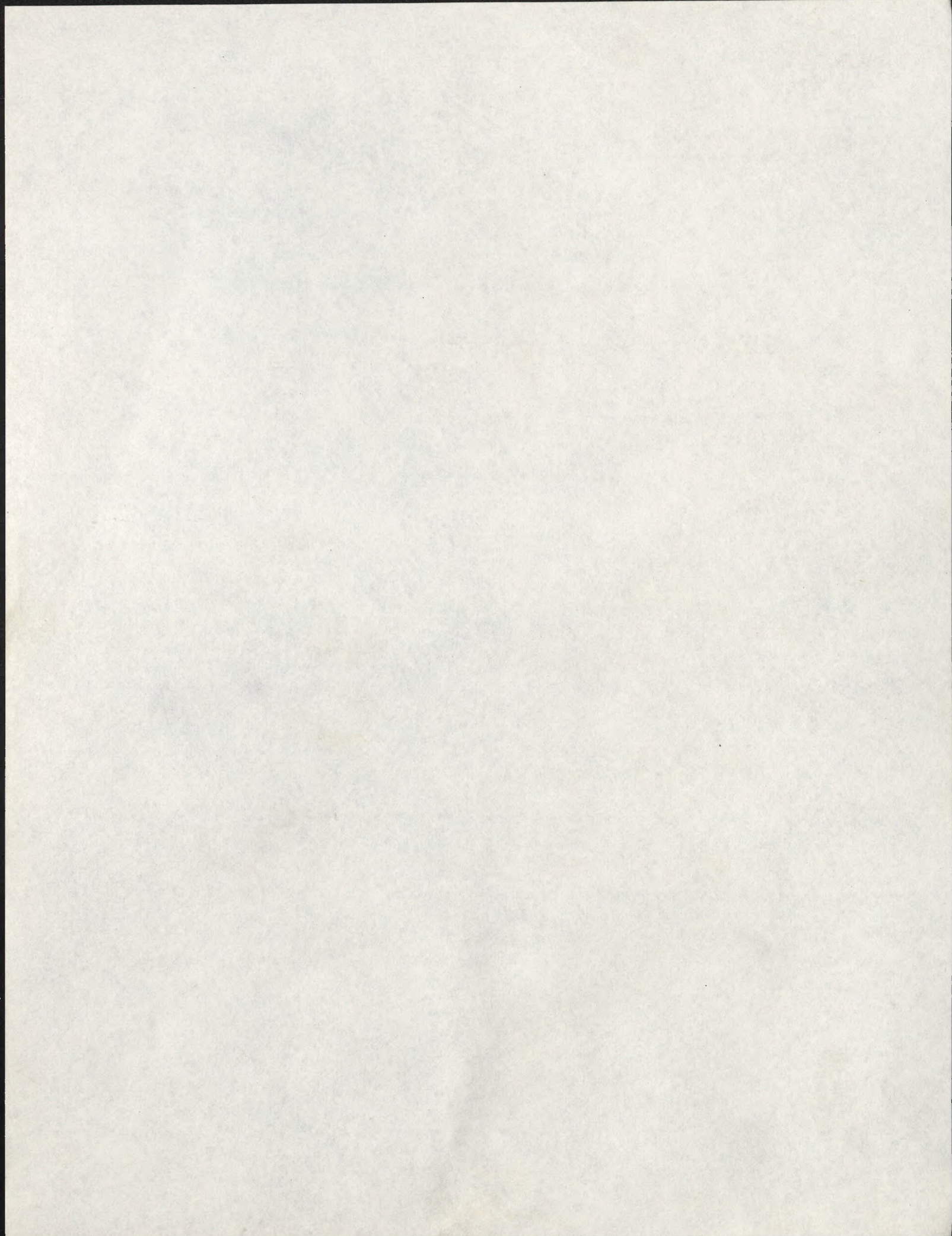






Neohydromys differs from its closest  
 relative Hydromys in its smaller size, <sup>with reduction of</sup> head  
 and body <sup>length (see table)</sup> ~~being~~ ~~compared to~~  
 in Hydromys, ~~the~~ ~~is~~ ~~behaves~~ ~~proportionate~~  
~~difference~~ in ~~size~~ <sup>and length</sup> of hind feet, tail length. The  
 pelt though <sup>near</sup> ~~not unlike~~ that of Pseudohydromys  
 in color and texture differs in <sup>being</sup> ~~being~~ larger  
~~length~~ and <sup>with</sup> ~~more~~ prominent guard hairs  
 It resembles Hydromys, <sup>and differs from Pseudohydromys and Zenopsis</sup> in possessing webbing between  
 the toes and a moderately well haired bicolored  
 tail. ~~It differs from Pseudohydromys and~~  
~~Zenopsis in presence of~~ Skull differs —





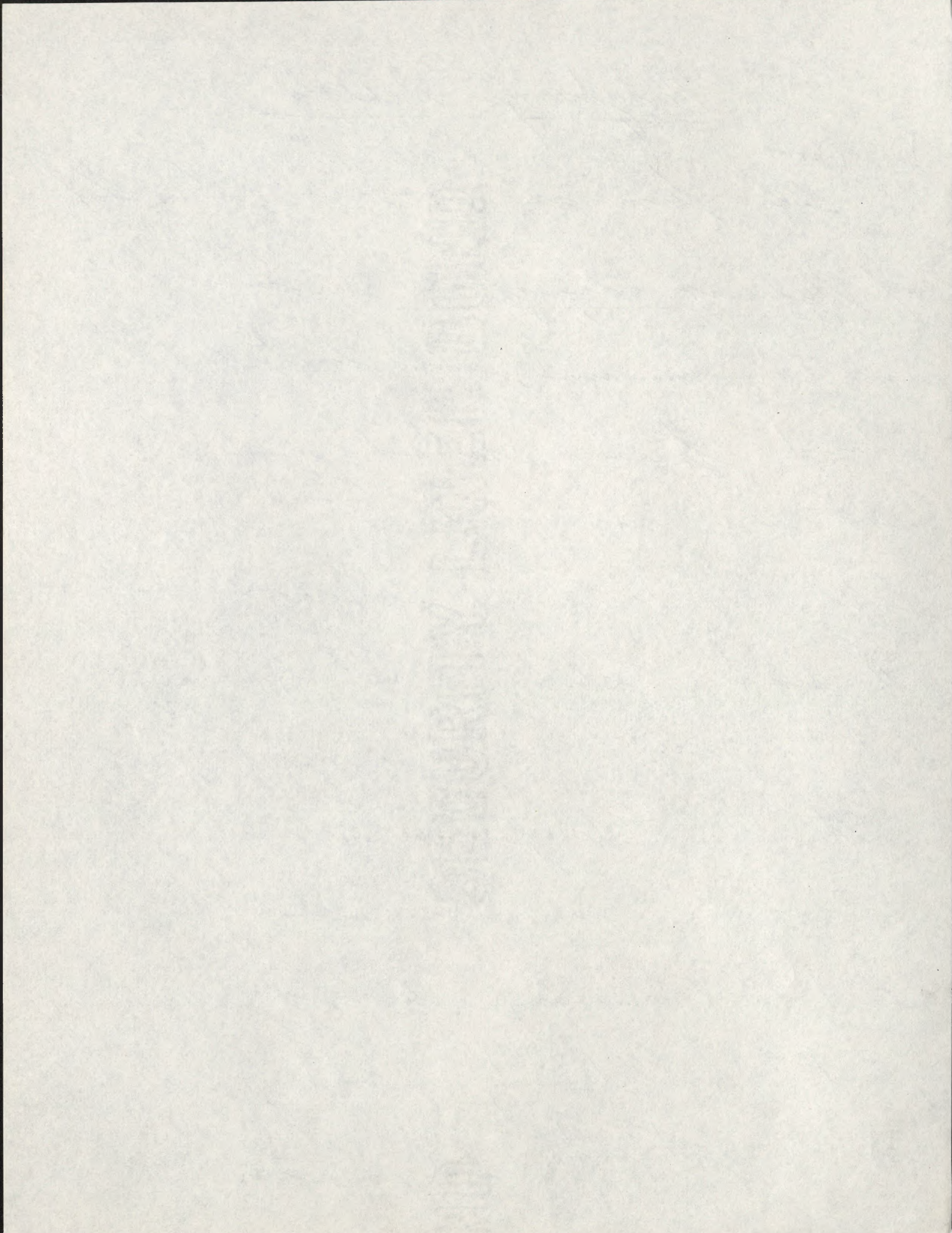


Type Neohydromys archboldi

Description

The form as compared to that of Hydromys chrysogaster is much smaller. (See measurements) with front feet reduced; fore arm shortened; hind feet broad with well defined webbing between 2nd and 3rd and 3rd and 4th digits; claws relatively heavy only slightly recurved; tail fleshy with a tendency towards being rectangular in cross section; ears small ~~not~~ <sup>slot</sup> not reaching tips of surrounding guard hairs, ~~broadly~~ rounded, fused inside and out. V. For further eyes small; pelt thick.







particulars see chart. #

There are two color phases represented in the series which cannot be explained by sexual, ecological, nor geographic differences. The lighter colored phase is represented by 16 individuals, 9 ♂s and 7 ♀s, which are characterized by a uniform <sup>(?)</sup> gray dorsal surface through which white banded guard hairs protrude producing the general effect of silvery flecks on the



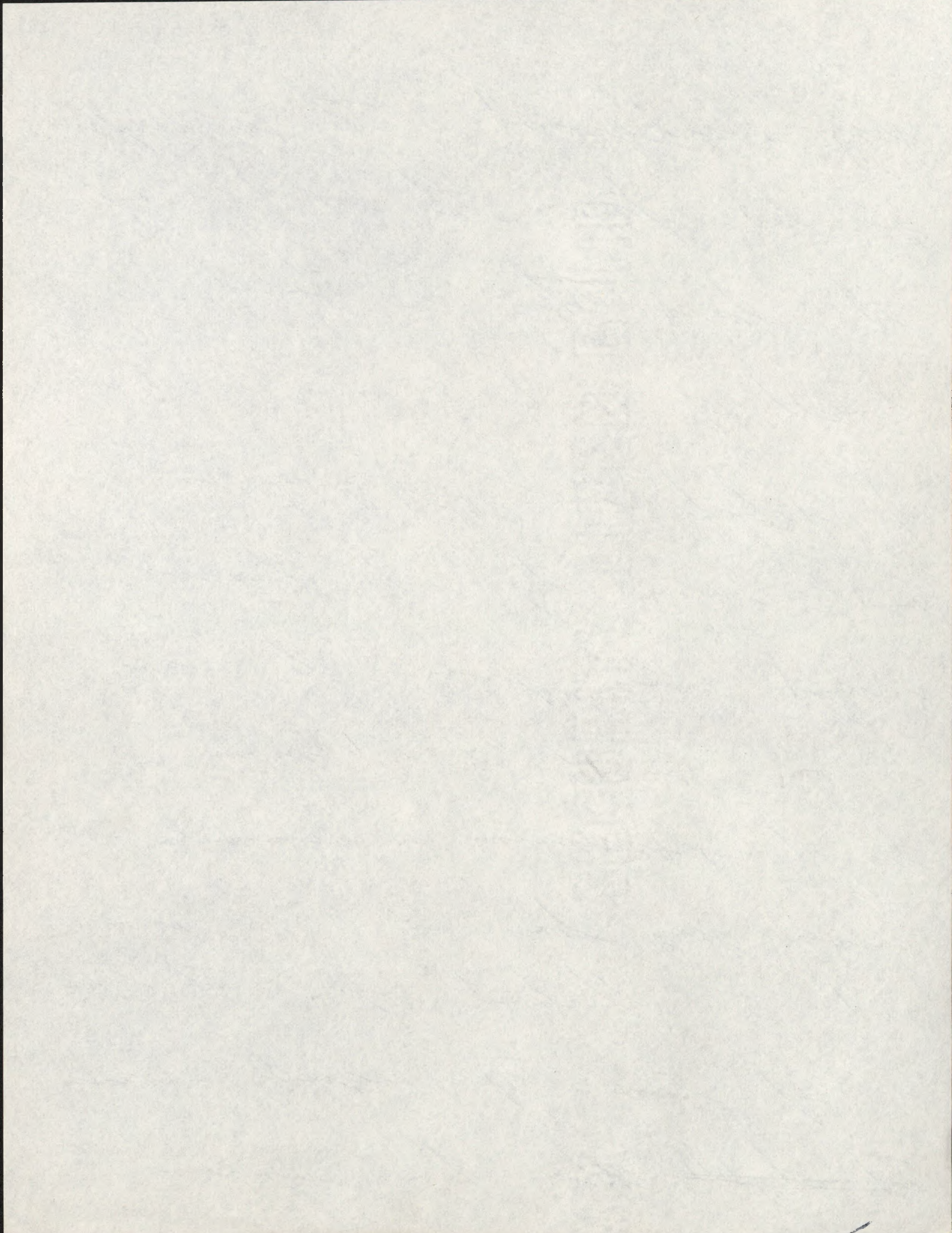
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gray background. The underfur  
 plucked from the middle of  
 the back has a total  
 length of 11 to 12 mm, 10.5 mm  
 of which is gull gray and  
 a 1/2 mm tip of fuscous.

Guard hairs from the same  
 region are 15 to 17 mm in  
 length possessing a similar  
 silver gray base of 10.5 mm  
 and a thickened tip. The tips  
 are of two types equally numerous;  
~~It is slightly~~ those of a uniform



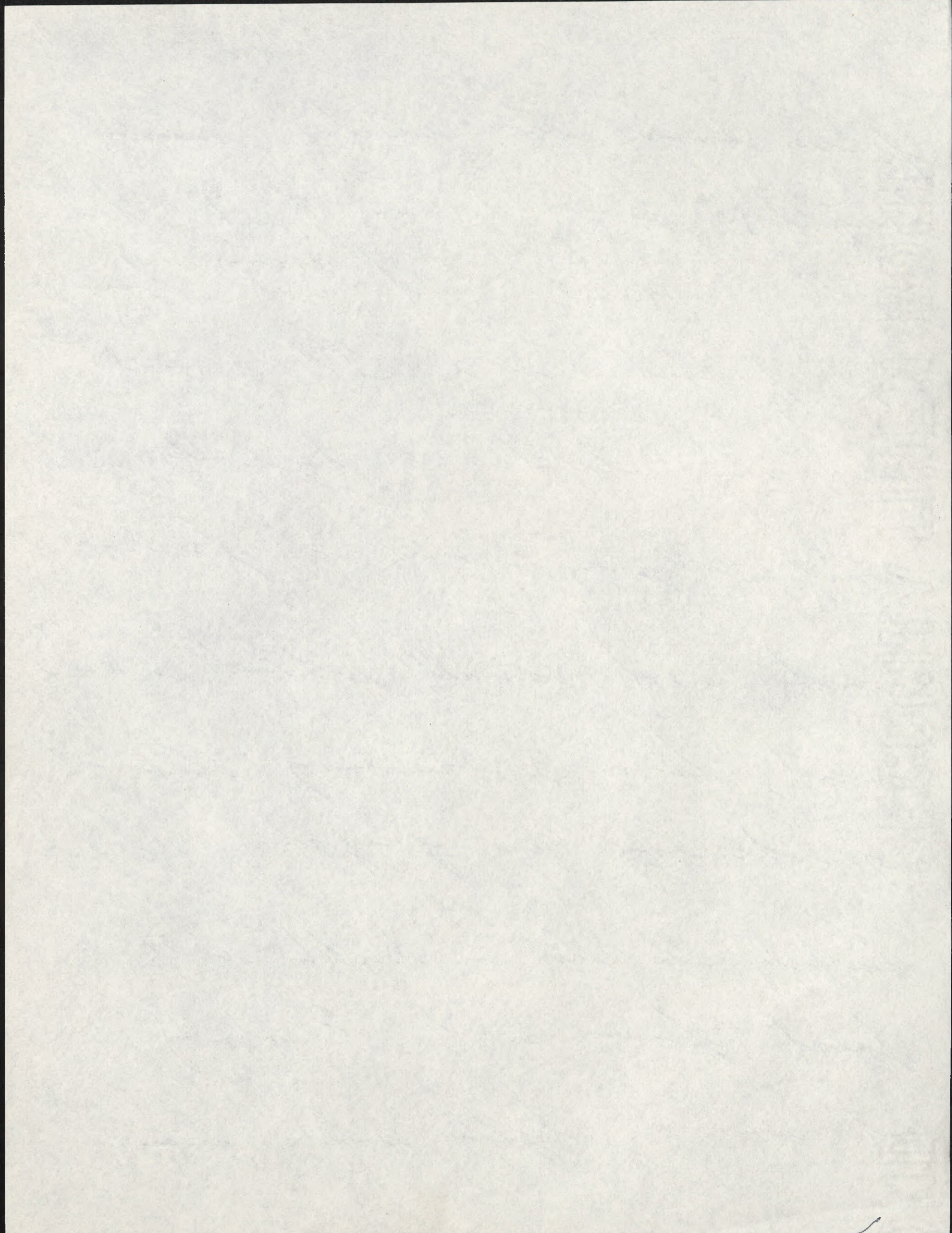




fuscus brown color which are ~~usually~~ <sup>often</sup> slightly longer (by 1-2mm), and those with a whitish band <sup>(3.5 to 4.5 mm)</sup> and a fuscus tip of about 1 mm. The general color as stated is dorsally a uniform gray with a fuscus wash and small whitish beaded guard hairs protruding through producing a grizzled effect.

Latterly the color is lighter with a faint fuscus wash. Ventrally it is a lighter silver gray

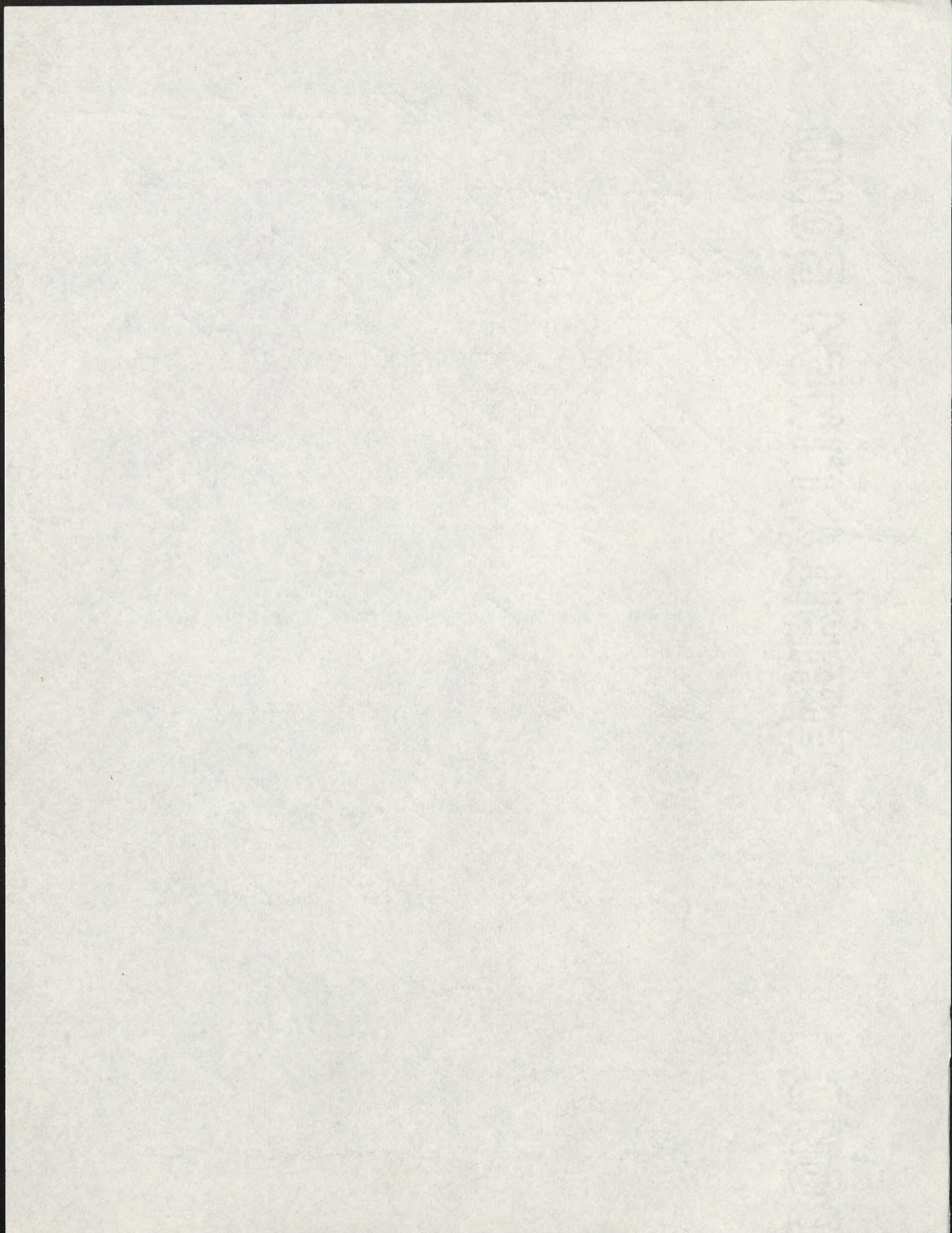






due to the fusion of the guard hairs  
and under fur being replaced by  
a whitish color. The fore and  
hind feet are covered with a  
very short white or yellow  
~~with~~ hair. The ears are furred  
inside and out with a short  
soft hair gray in color like  
that of the body. The tail  
at the base and for about  
1 cm. of its length has a hair  
covering similar to that of the  
body. For the remainder of

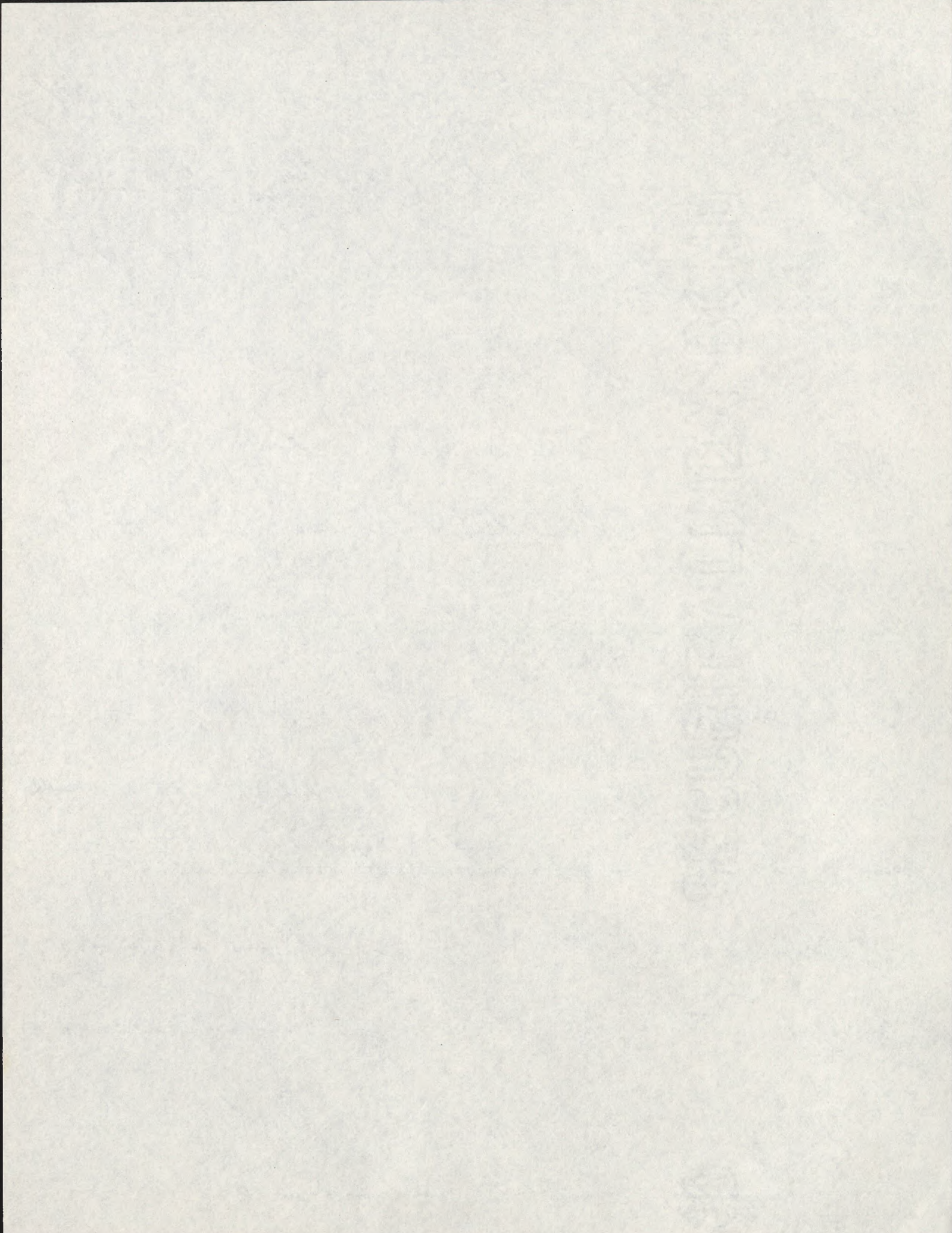






its length it is covered with  
 stiffer hair which for ~~the~~ <sup>the</sup> approximately  
 $\frac{2}{3}$  ~~of its length~~ is a fuscous black  
 in color; the remaining distal third  
 is white. The tail hair is  
 unevenly distributed; dorsally being  
 thinner and shorter (1 to 4 mm) so  
 the annulations are visible;  
 ventrally, however, the hair increases  
 in length ~~and toward the tip~~  
 obscuring the annulations and  
 toward the tip forms a ventral posterior  
 fringe of white hair 6 to 10 mm  
 in length. The vibrissae ventrally







are shorter, more numerous, and are whitish in color; the dorsal and longer ones have a dark brown or black base with the distal portion faded a dirty white color.

Of the darker colored phase there are 15 individuals, 9 ♂s and 6 ♀s (2 of which are juveniles). They differ from the lighter phase in that they lack the white of the guard hairs ~~instead~~



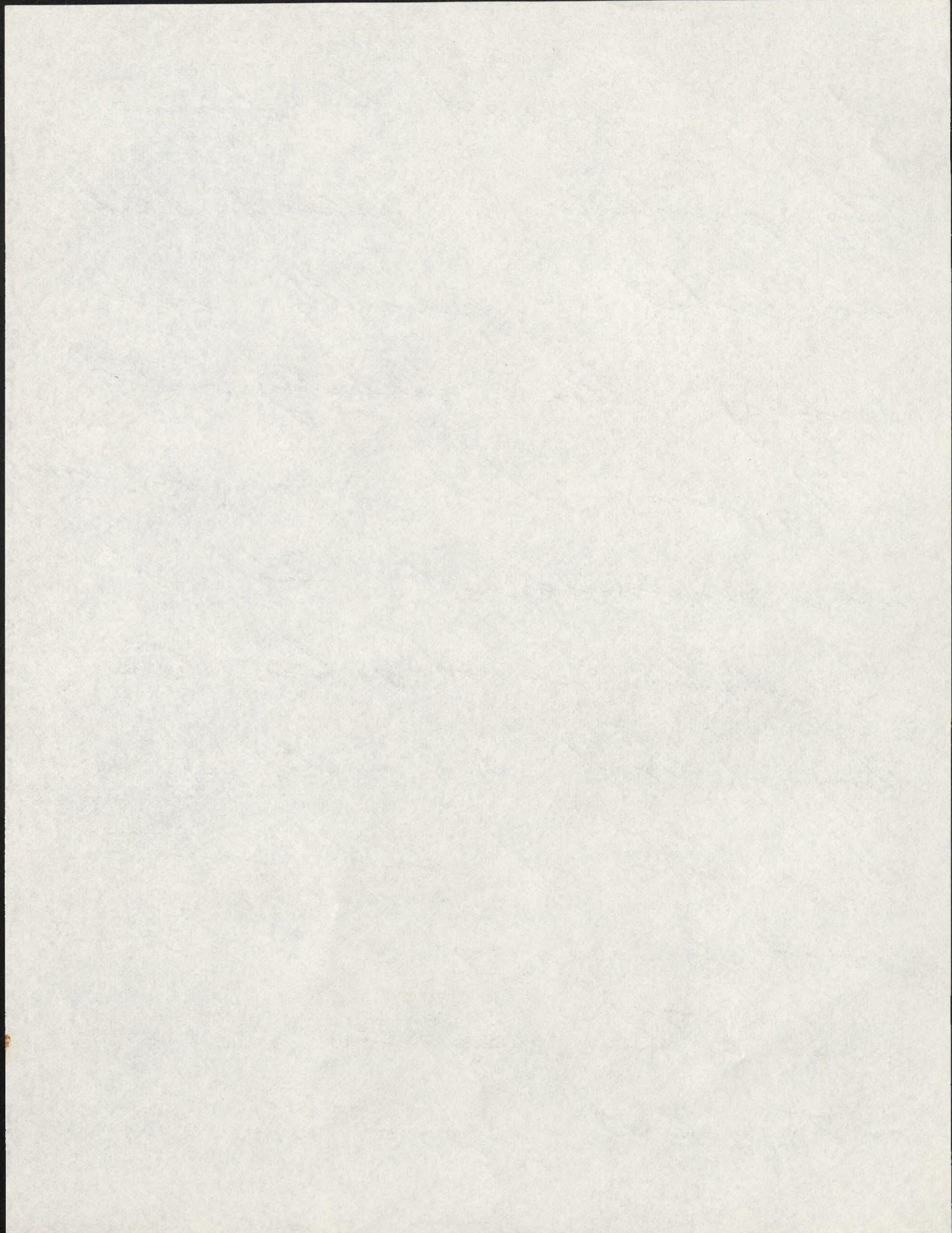
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which is replaced by fuscus.

This produces a general darker color which is slightly darker dorsally than ventrally. The feet, ears, tail, and vibrissae are similar to that of the lighter colored phase. One thing of note ~~and that~~ is the presence of white spotting formed by a group of white hairs. This spotting occurs in ~~the~~ general regions, on the

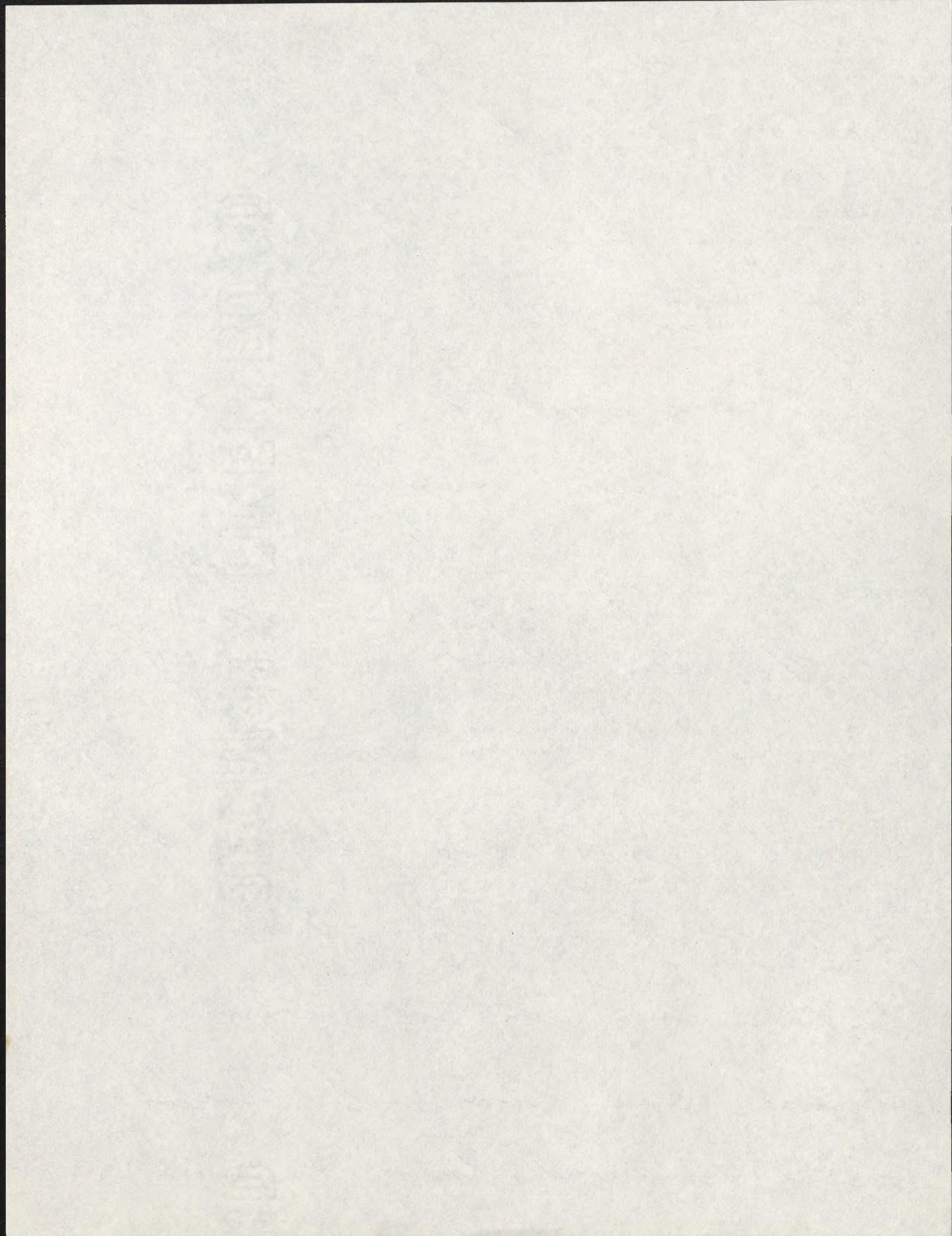






posterior half of the back, the  
other in the vicinity of the  
throat. On the back the  
spots are small ( $\frac{1}{2}$  to 2 mm diameter)  
and vary in number from  
one to many. The throat spot  
on the other hand is usually  
a single larger spot located  
on the mid-line between the  
prelegs or on the throat. The  
back spotting in the series  
occurs only on the darker  
phase (7 males and 4 females, not on juveniles).







The throat spotting, occurred on  
 8 of the ♂s and 2 of the ♀s only  
 one (a male) of which was of  
 the light ~~colored~~ phase.

Description of skull



SECRET



Measurements of Neohydromys

♂ Total length

320. av.

345. l.

285. s.

♀ Total length

306. av.

350. l.

273. s.

♂ Tail length

169. av.

187. l.

145. s.

♀ Tail length

163. av.

190. l.

143. s.

♂ Hind foot length s.u.

36. av.

39. l.

33. s.

♀ Hind foot s.u.

35. av.

38. l.

33. s.

♂ Ear from crown

9. av.

10. l.

8. s.

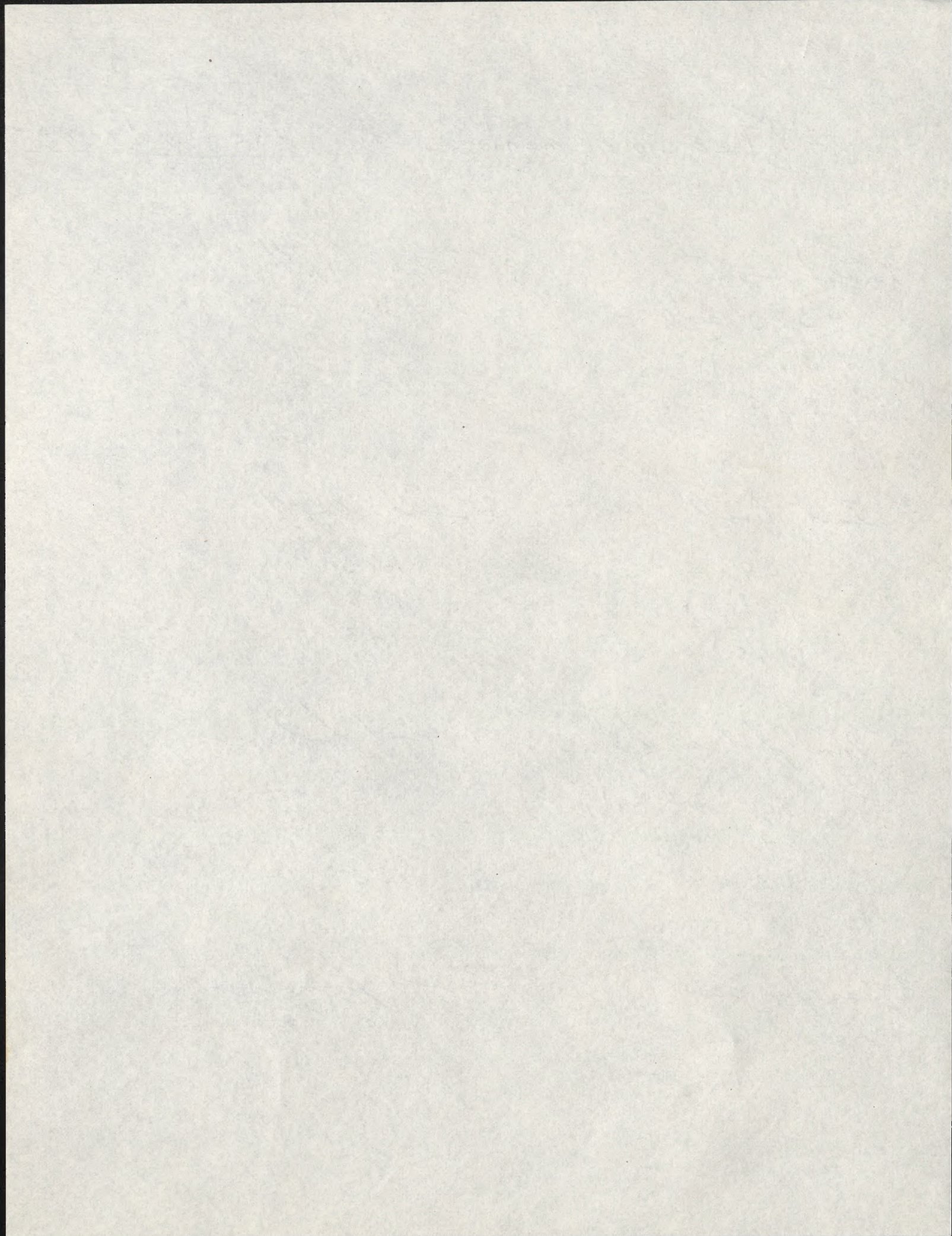
♀ Ear from crown

8. av.

9. l.

7. s.







## Hydromys

## Neohydromys

## Pseudohydromys

## Leptomys

Tail

Fleshy.  
10 mm diameter 10 mm  
from base.

Moderately fleshy.  
5 mm diameter 10 mm.  
from base.

Not fleshy  
3 mm diameter 10 mm  
from base.

Not fleshy  
— diameter 10 mm  
from base.

Well haired.

Moderately well haired.

Sparsely haired.

Sparsely haired.

Poorly developed posterior  
dorsal fringe (except Haagen)

Well developed posterior  
dorsal fringe

No dorsal fringe

No dorsal fringe.

Bicolored.

Bicolored.

Monocolored.

Monocolored.

Length 200-350 mm

Length 190-143

Length 95 mm

Length 134-172

Pelt.  
(See other  
reference)

Length of guard  
hair taken from  
middle of back  
18-18 mm. Length  
of underfur 6-11 mm.

Length of guard hair  
taken from middle of  
back 15-17 mm. [14-16]  
Length of underfur  
11-12 mm.

Length of guard  
hairs taken from  
middle of back  
7-9 mm.  
Length of underfur  
6-7 mm.

Length of guard  
hair taken from middle  
of back 7-10 mm  
Length of underfur 6-8

Habitat

Frequent streams  
on river banks of  
forested lowland  
and mountain areas.

Frequent rocky borders  
of streams and lakes  
at high elevations  
(2500' in above)

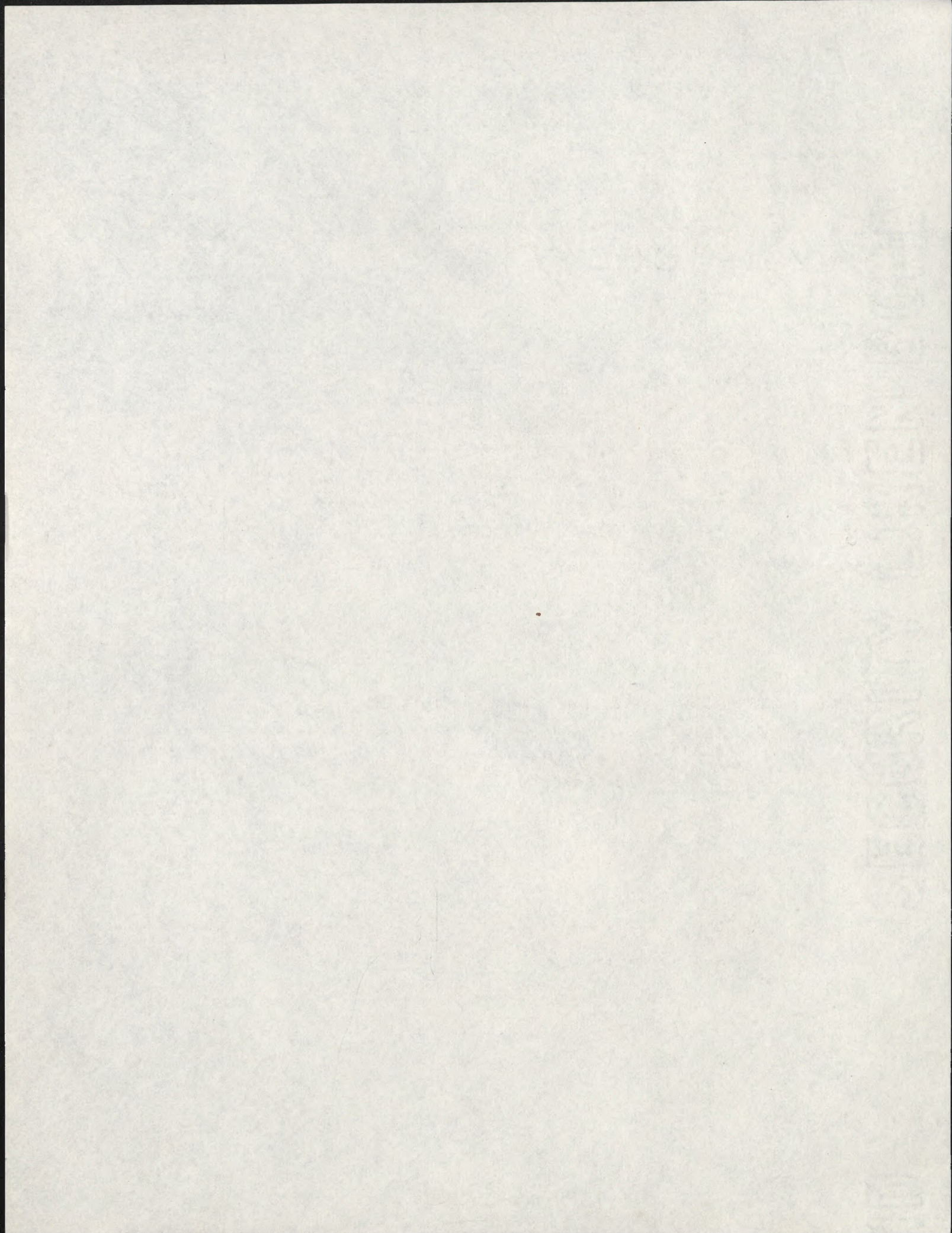
Occurs in mixed cover  
of brush, grass, and  
small trees of high.  
(Not restricted to  
lake borders.)

One exception and that  
individual was taken  
on moist littered  
floor of the rain  
forest.

3

Palatal  
folds







## Hydromys

## Neohydromys

## Pseudohydromys

## Leptomys

	Hydromys	Neohydromys	Pseudohydromys	Leptomys
Size	Large. Head and body length <u>205-350</u> mm	Medium. Head and body length <u>    </u> mm	Small. Head and body length <u>91</u> mm	Medium. Head and body length <u>124-162</u> mm.
Pelt (see other reference)	Hard to soft texture. Agouti brownish-black, light belly. No white <sup>rump</sup> speckling.	Very soft texture. Gray monocolored <sup>some</sup> with light belly. White <sup>rump</sup> speckling.	Very soft texture. Gray monocolored. White <sup>rump</sup> speckling.	Soft texture. Buff <sup>brown with</sup> white belly. No white <sup>rump</sup> speckling.
Ears	Small to large <u>15-22</u> mm. Nearly naked. May or may not protrude beyond surrounding fur.	Small. <u>10-7</u> mm. Furred inside and out. Does not protrude out of surrounding fur.	Small. <u>12</u> mm. Nearly naked. Protrude beyond surrounding hair <u>1 to 2</u> mm.	Large <u>20-21</u> mm. Nearly naked. Protrude beyond surrounding hair <u>    </u> .
Vibrissae	Length of longest <u>60-75</u> . Numerous (particularly in <u>H. cox</u> ). Protruding from bulging lips.	Length of longest <u>45-60</u> . Numerous. Protruding from bulging lips.	Length of longest <u>25-40</u> . Moderately numerous. No bulging of lips apparent.	Length of longest <u>    </u> . Moderately numerous. No bulging lips.
Front feet	The pad at the base of the halix and that of the base of the 1st finger divided by deep cleft. Hair at base of foot approximately <u>13</u> mm long.	The pad at the base of the halix and that at the base of the 1st finger divided by <u>    </u> . Hair at base of foot approximately <u>8</u> mm long.	The pad at the base of the halix and that at the base of the 1st finger is separated by <u>1</u> mm. Hair at base of foot approximately <u>10</u> mm.	
Hind feet	Fleshy. Laterally broadened. Well defined webbing between 2nd and 3rd and 3rd and 4th digits. Length <u>46-66</u> mm.	Fleshy. Laterally broadened. Well defined webbing between 2nd and 3rd and 3rd and 4th digits. Length <u>39-33</u> .	Not fleshy. Not broadened laterally. No webbing. Length <u>19</u> mm.	Not fleshy. Not broadened laterally. No webbing. Length <u>36-40</u> mm.



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## External

- ① ~~Skin~~
- ② ~~Pelt~~ (soft and thick, color)
- ③ ~~Ear~~
- ⑦ ~~Tail~~ (thickened, bushy, haired, visible scutes, proportion to body length.)
- ④ ~~Head~~  
~~Feet~~ (thick, hoofed, number of digits)
- ⑧ ~~Palatal folds~~ (3 ±)
- ④ ~~Corn~~ (small external)
- ④ ~~Whiskers~~
- ⑤ ~~Front feet~~

○→

## Skull

Molars (length  $\frac{3}{2}$  typical)

Cranium (flat, rounded)

Preorbital fossa (Truncated)

Postorbital canal

axis of upper envisions in gut  
less than 90° angle with  
nasals

Form of upper envisions

(T) Zygomatic notch

(T) Zuberch like process of  
maxilla much (20 and in 1/2 long)

(T) Reduction of bulla (?)

Inter orbital region (constricted)

Multirooted tooth



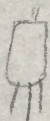
STANDARD TIME BOND



Pseudo,

Rectangular

3 hairs per scale



---

Neo.

Rectangular

3 hairs per scale



---

H. Rec.  
3 hairs





Were carried from my and built



Type

Dyognostic characters

Description

External characters

Color

Skull

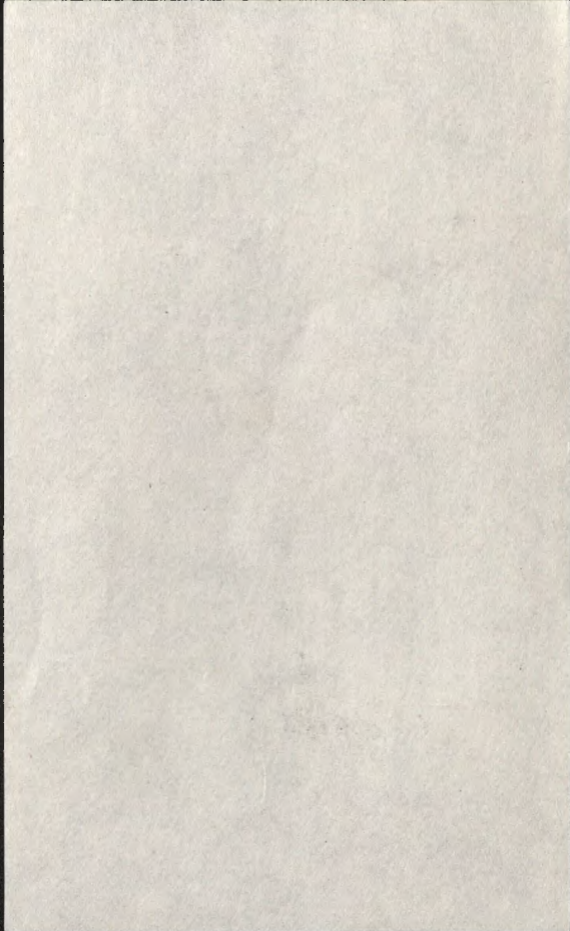
Measurements

Comparison

Material

Remarks







SPECIES *Hydromys chrysogaster*

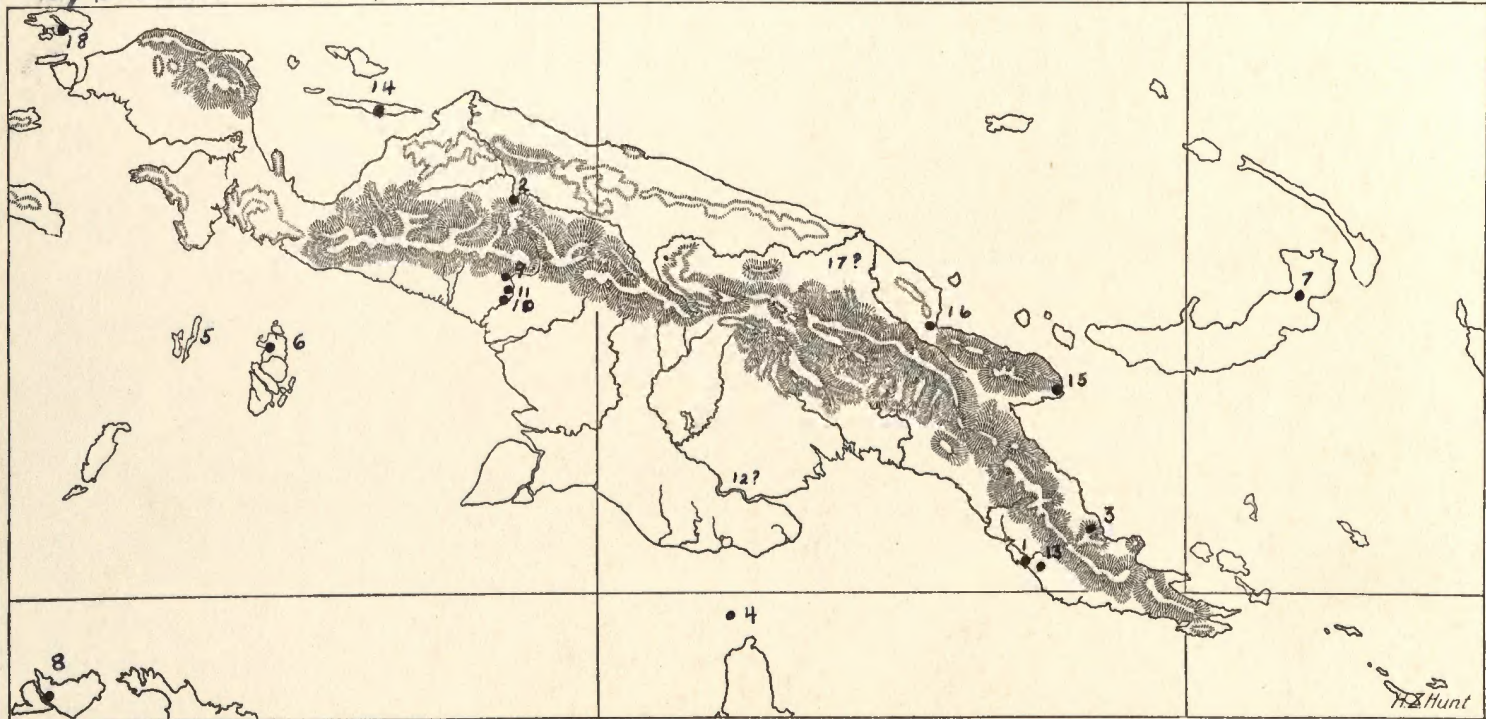
LEGEND

SUBSPECIES

LOCALITY

SPECIMEN

*Specimens recorded in literature.*









SPECIES

Hydromys chrysoaster

LEGEND

SUBSPECIES

LOCALITY

SPECIMEN in Am. Mus. Nat. Hist.

1 esox

Baruari rest house

\*108470

2 illuteus

4 km SW Bernhard Camp

\*152072, \*73, \*74, \*75, \*76.

3 illuteus

Bernhard Camp

\*152077, \*78.

4 ?

Hollandia

\*109503

5 papua

Upper Fly River

\*105201

6 tarara

Wasi Kussa

\*105782

7 "

Gaima

\*105781

8 "

Sturt Island

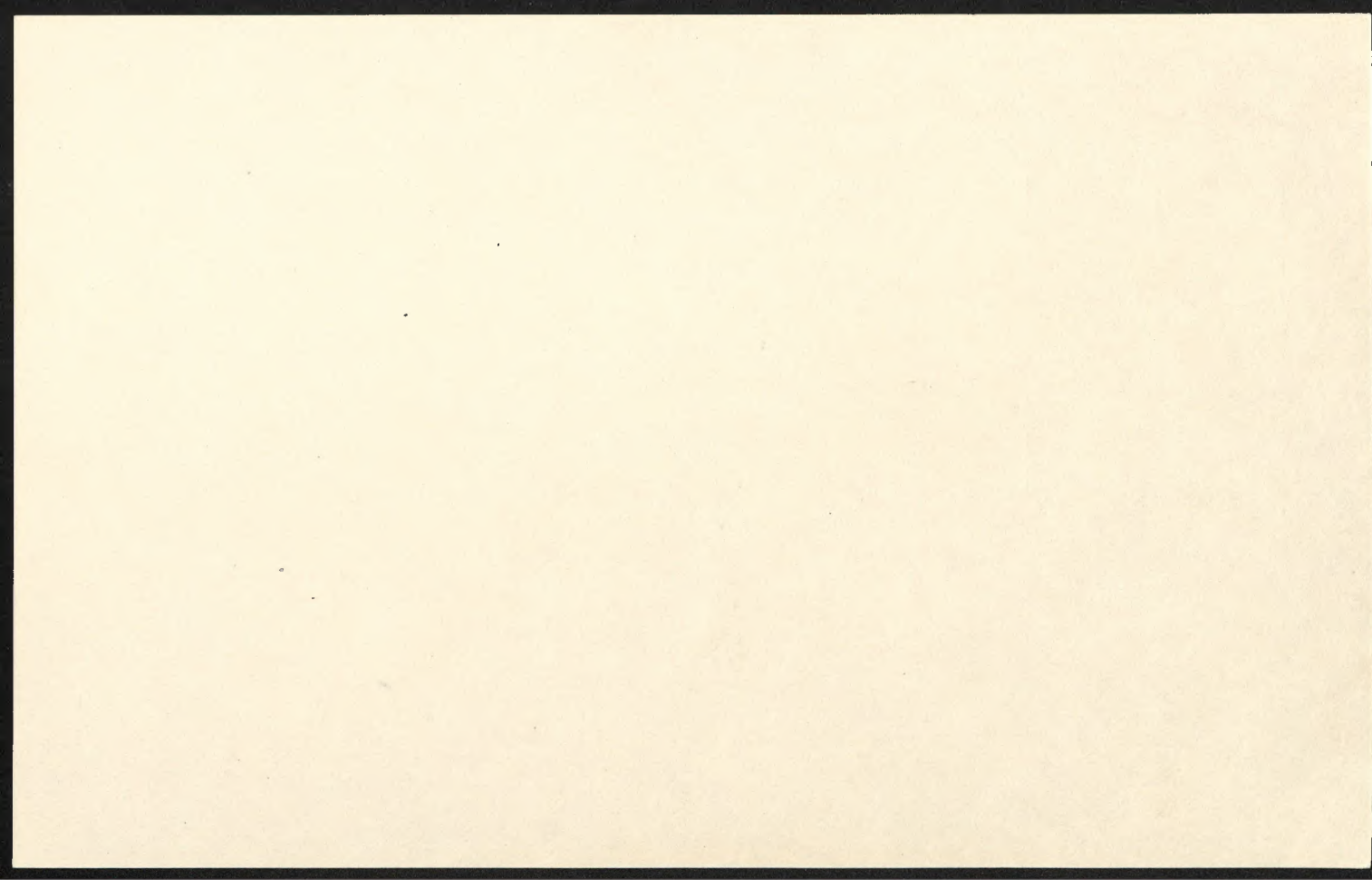
\*105778 - \*105780

9 "

Lake Daviumbu

\*105772 - \*105777







SPECIES *Hydromys chrysogaster*

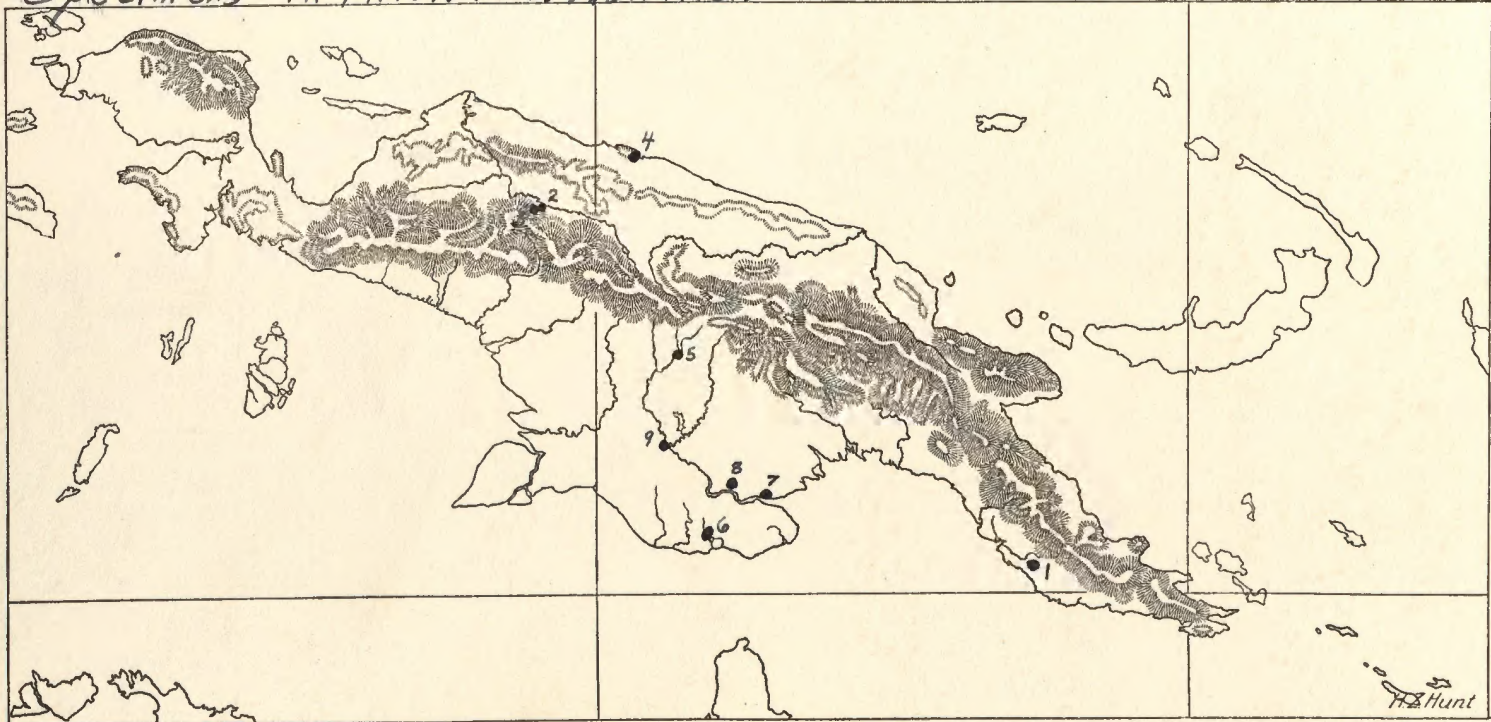
LEGEND

SUBSPECIES

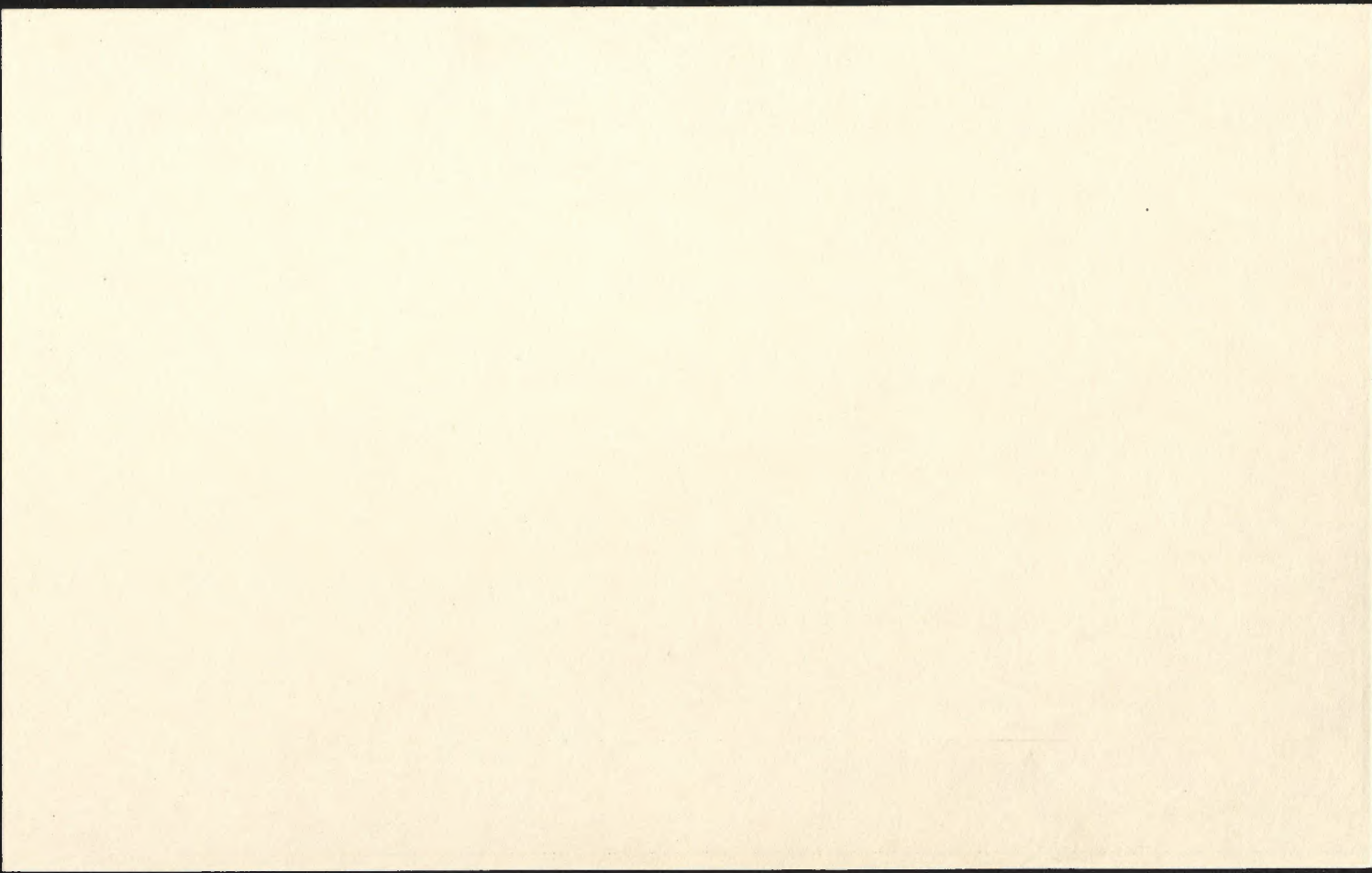
LOCALITY

SPECIMEN

*Specimens in Amer. Mus. Nat. Hist.*









SPECIES *Hydromys chrysogaster*

LEGEND                      SUBSPECIES                      LOCALITY                      SPECIMEN

13.	Thomas 1897, p. 607 ?	Haveri, near Mt. Wori-Wori, Astrolaub Range	1 British Mus., collected by Loria.
14.	Stein 1938, p. 123 ?	Japan	1 Stein collection. [3 specimens recorded by Rummler]
15.	Rummler 1938, p. 24 ?	Sattlburg	1 in Leiden, 1 in Berlin Mus.
16.	?	Astrolabe Bay	1 Berlin Mus.
17.	?	German New Guinea	1 Berlin Mus.
X	Heller, 1897, p. 3 —————	Sorong	Not <u>Hydromys</u> [See Rummler 1938, p. 24.]
18	Tate, 1936, p. 643 ?	<del>D'Ent</del> Waigeu Isl.	1 in Field Museum = 31847.







SPECIES *Hydromys chrysogaster*

LEGEND SUBSPECIES LOCALITY SPECIMEN

Tate + Archbold, 1935, p. 8

7. neobritannicus (Tate) Bainings, Balayang, Wide Bay, New Britain, Solomon Isl.

1 in Amer. Mus. Nat. Hist., collector W.F. Coultas

Thomas 1921, p. 430

8. melicertes (Tate) Biro, Apsley Straits, Melville Island.

1 in London Mus.

Thomas 1922, p. 731

9. ? Kloof birak, Noord R.

2 in Liden Mus.

Jentink 1911, p. 168

10. ? Bivak Island

7 specimens

Jentink 1907, p. 5

11. ? Sabang

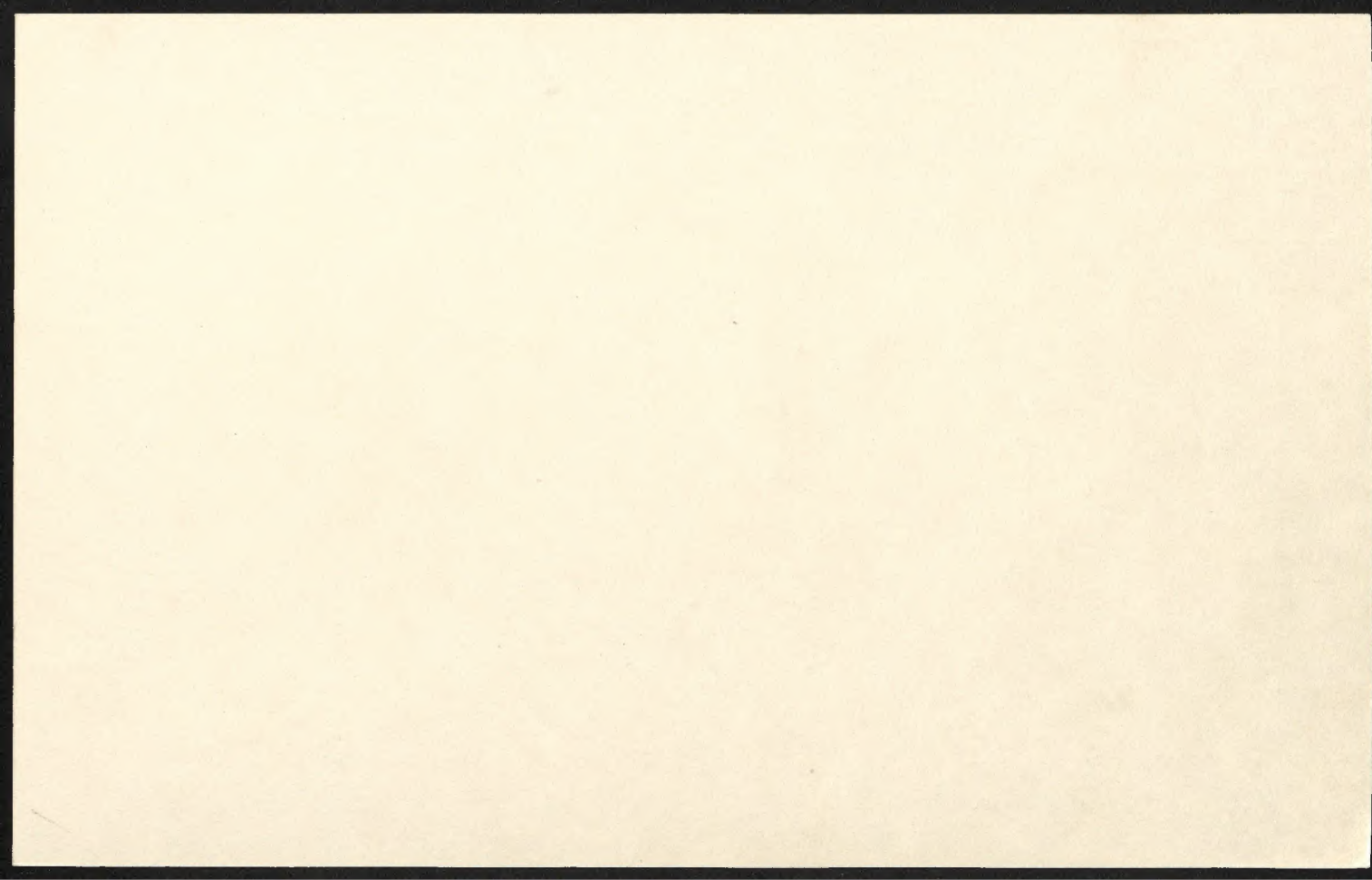
1 Lorentz collector., Leiden Mus.

Peters + Doria 1881, p. 706

12. ? Fly

1







SPECIES *Hydromys chrysogaster*

LEGEND SUBSPECIES LOCALITY SPECIMEN

Thomas 1906, p. 324

1. esox (Type) Port Moresby 1 in London Mus.

Thomas 1922 p. 264

2. illuteus (Type) Prauwen bivak, Idenburg R. 1 in London Mus., collected by van Heurn

Throughton 1937, p. 127

3. oriens (Type) Mt. Lamington 1 in Australia Museum, coll. by C.T. Mc.Namara

Throughton 1935 p. 254

4. moae (Type) Banks Island, Torres Strait 2 in Australia Museum

Peters 1874 p. 302

5. beccarii (Type) Weri, Kei Islands 2 collector Becarri

Thomas 1921 p. 429

6. nauticus (Type) Dobo, Aru Isl. 1 collected by W. Stalker





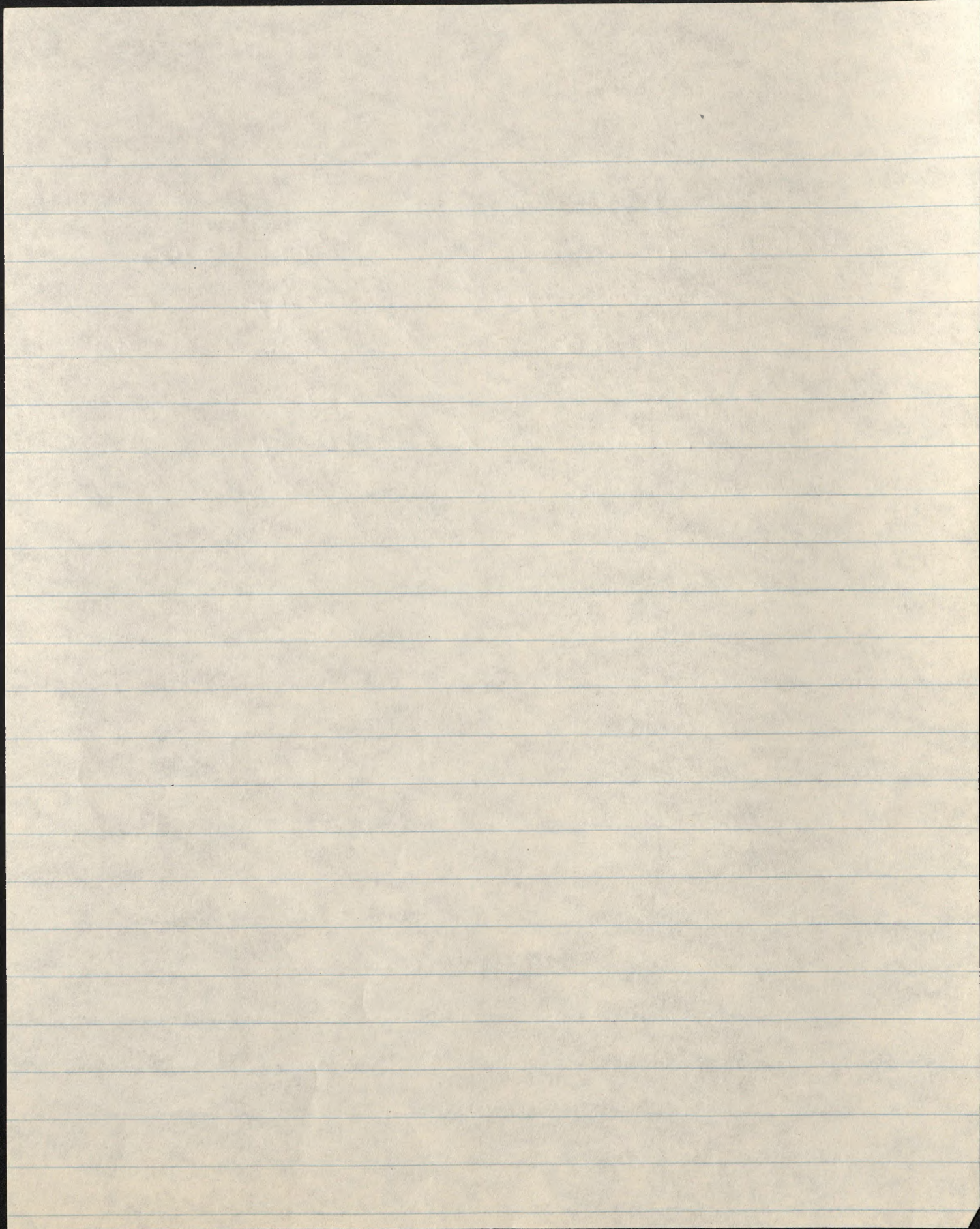


Hydromys lebbena - 28 individuals  
were taken from the Lake Lebena camp.

The habitat of this small Hydromys was the grassy borders of the lake and its outlet stream. Here the grass grew from 18 to 30 inches high covering the shore in a narrow strip from two to six feet wide between the elevated lip and the forest edge or marsh. Through the fringe of rather dense coarse grass there were numerous runways about 2 inches in width extending in all directions. It was in these paths that most of these animals were taken.

There were numerous well worn paths which led out of the grass over the six to eight inch high lip of the lake shore. During the drier season when the lake was down track could be seen along the small sandy beach and it was here that several individuals were trapped. They apparently frequent the waters edge picking up the insects which fall in. It is quite possible, too,





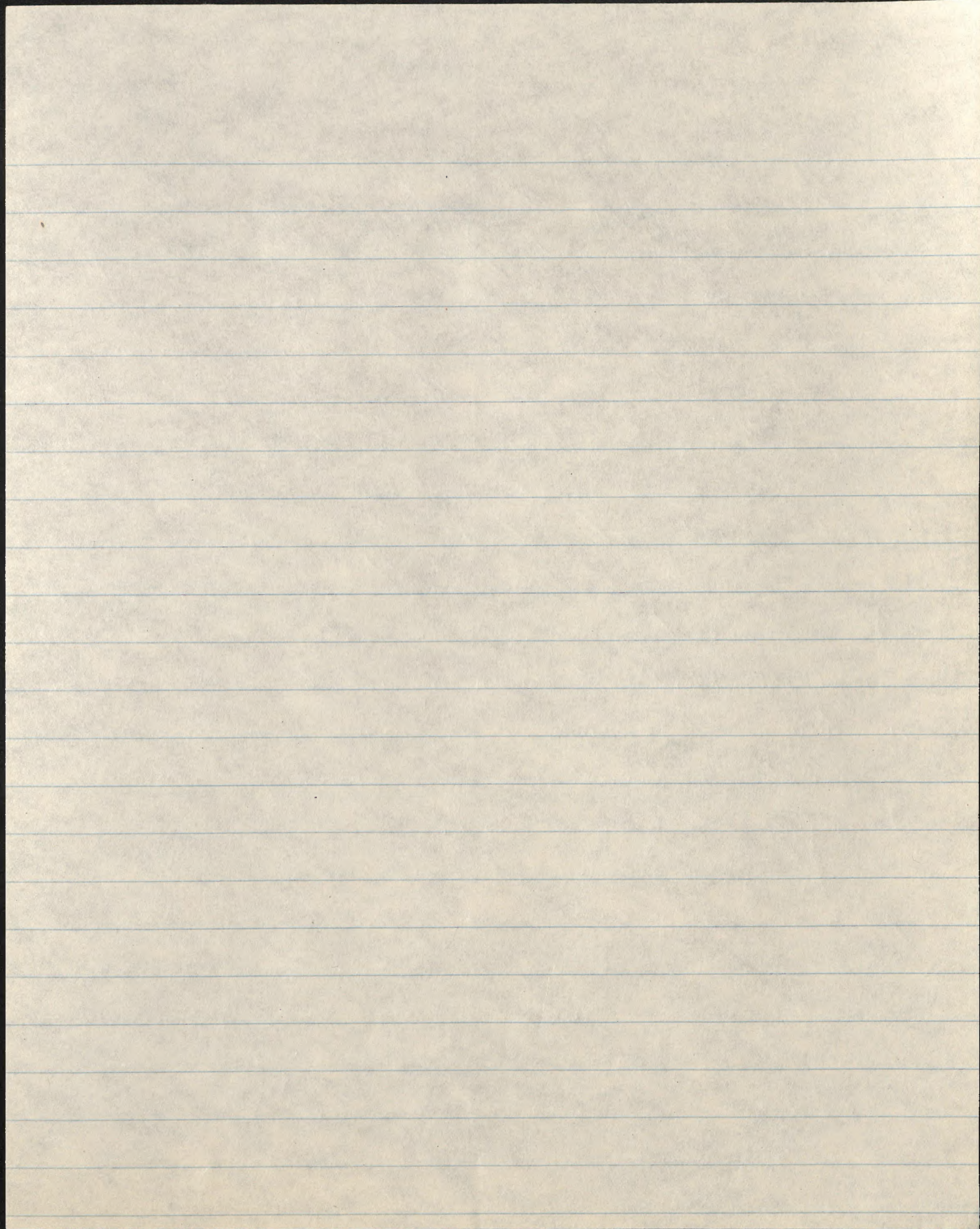


2

that they swam in the lake among the sedges which grew out of the shallow peaty lake margin. On one occasion only was an individual taken as far away from the water edge as 10 ft. This individual was caught in a trap placed at the entrance of a hole in a moss clump which had formed about the base of a bush some two yards away from the lake-grass fringe. Three stomachs were examined and containing a small amount of green vegetable matter, another a mixture of plant and animal matter, and the third contained curdled milk (It was apparently still suckling).

Four individuals were taken at the 3600 ft camp. One individual was taken in a trap set in a small runway through the tall grass clumps above an underground stream. The ground here was quite moist but there was no visible surface water could be heard flowing over the rocks a short distance below the sod. The other

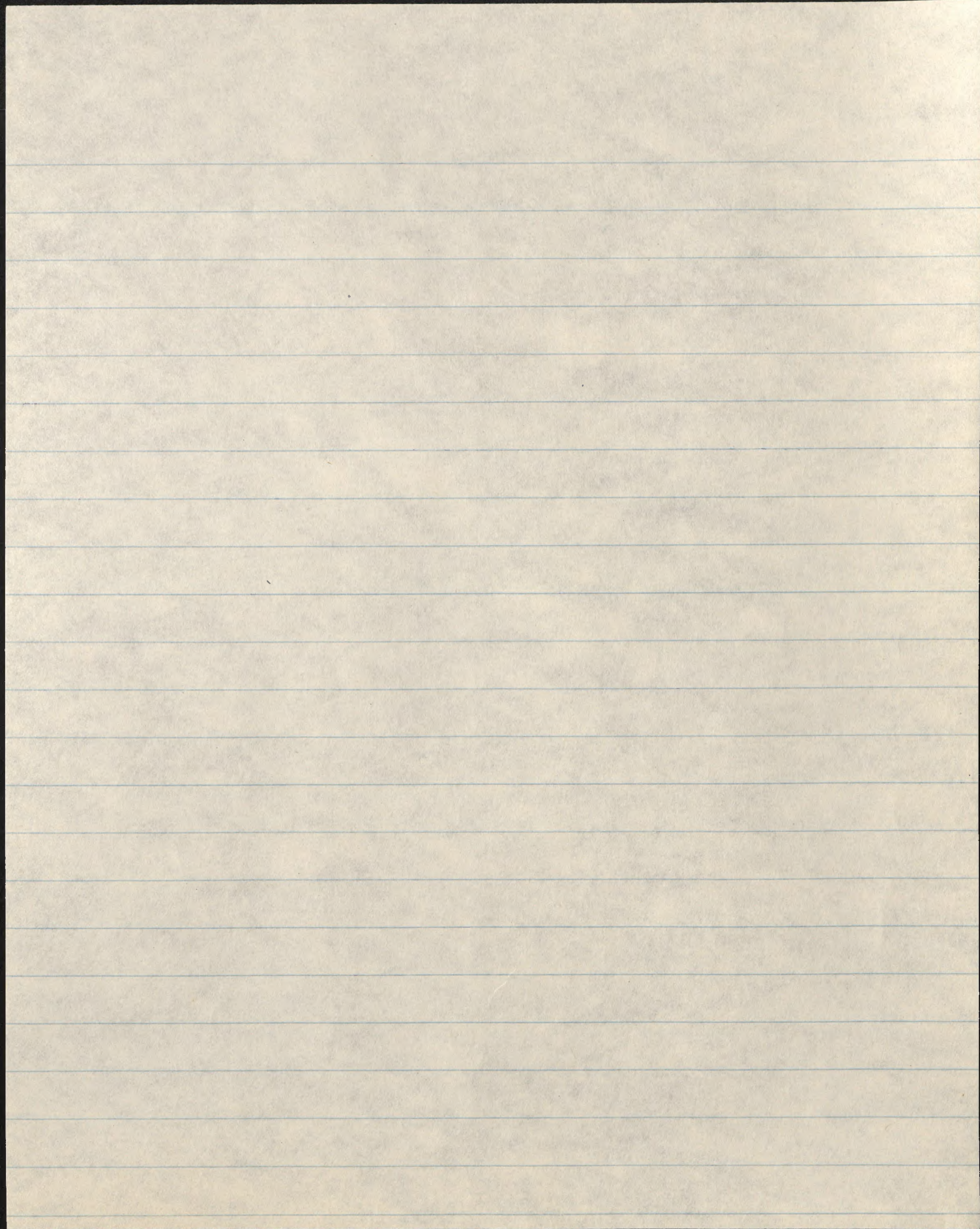






the individuals were taken by a collector  
who said they were trapped in small runways  
along the grassy stream side.



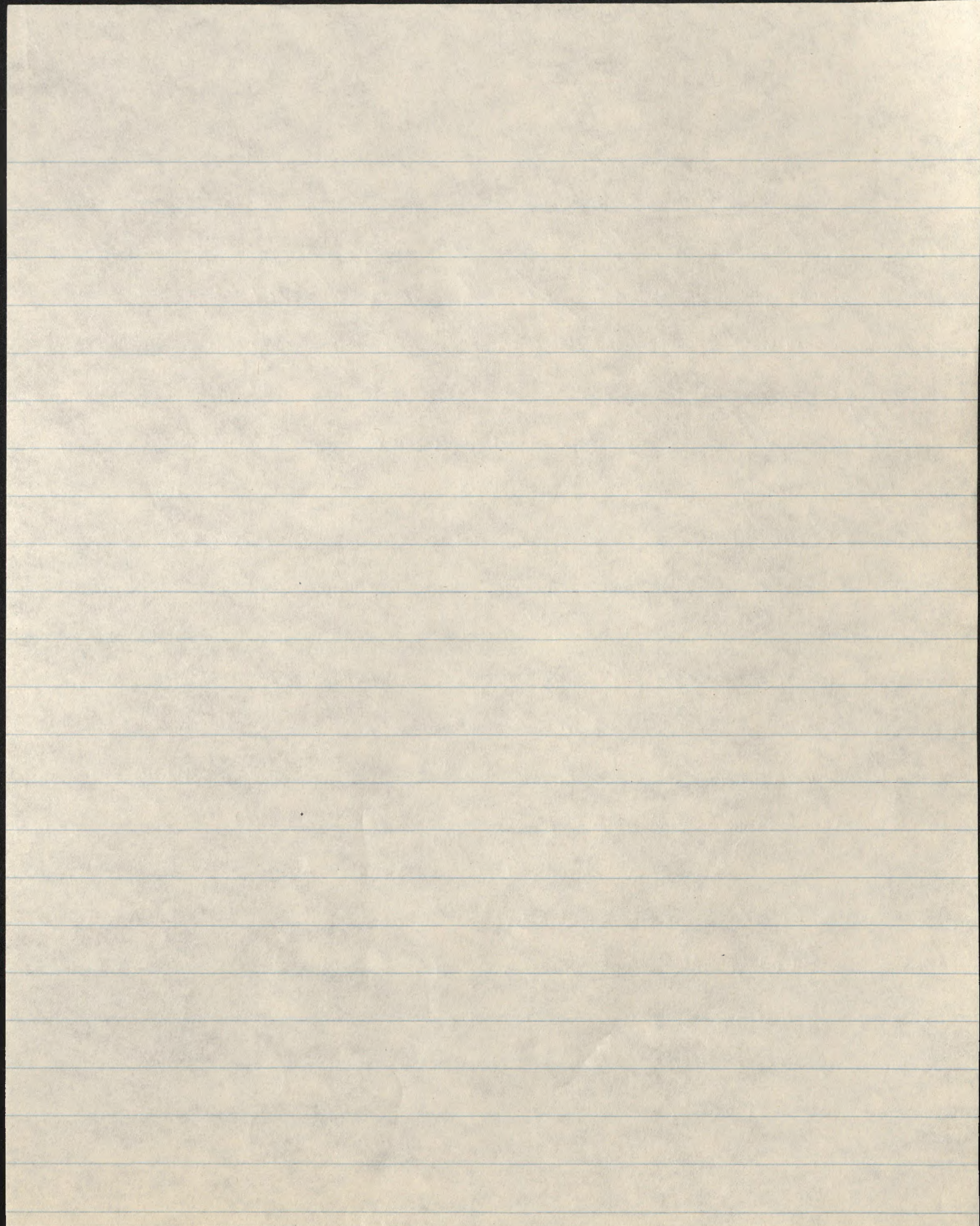




Hydromys asper - Three individuals were taken at the 2800 m camp. Habitat was the mossy forest with moss covered undergrowth and litter. The traps in which they were caught were in each case set in rather ill defined runways between fifty and sixty feet from the stream side. The stomachs were empty. The feces were rather large one and one quarter inch long by one half inch thick containing what appeared to be the remains of insects. A female taken October 24 had no embryos nor were the mammary glands functional.

At the Belu River camp one individual was trapped and two others were brought in by natives. The habitat of the trapped animal was much the same as that described from the camp above.







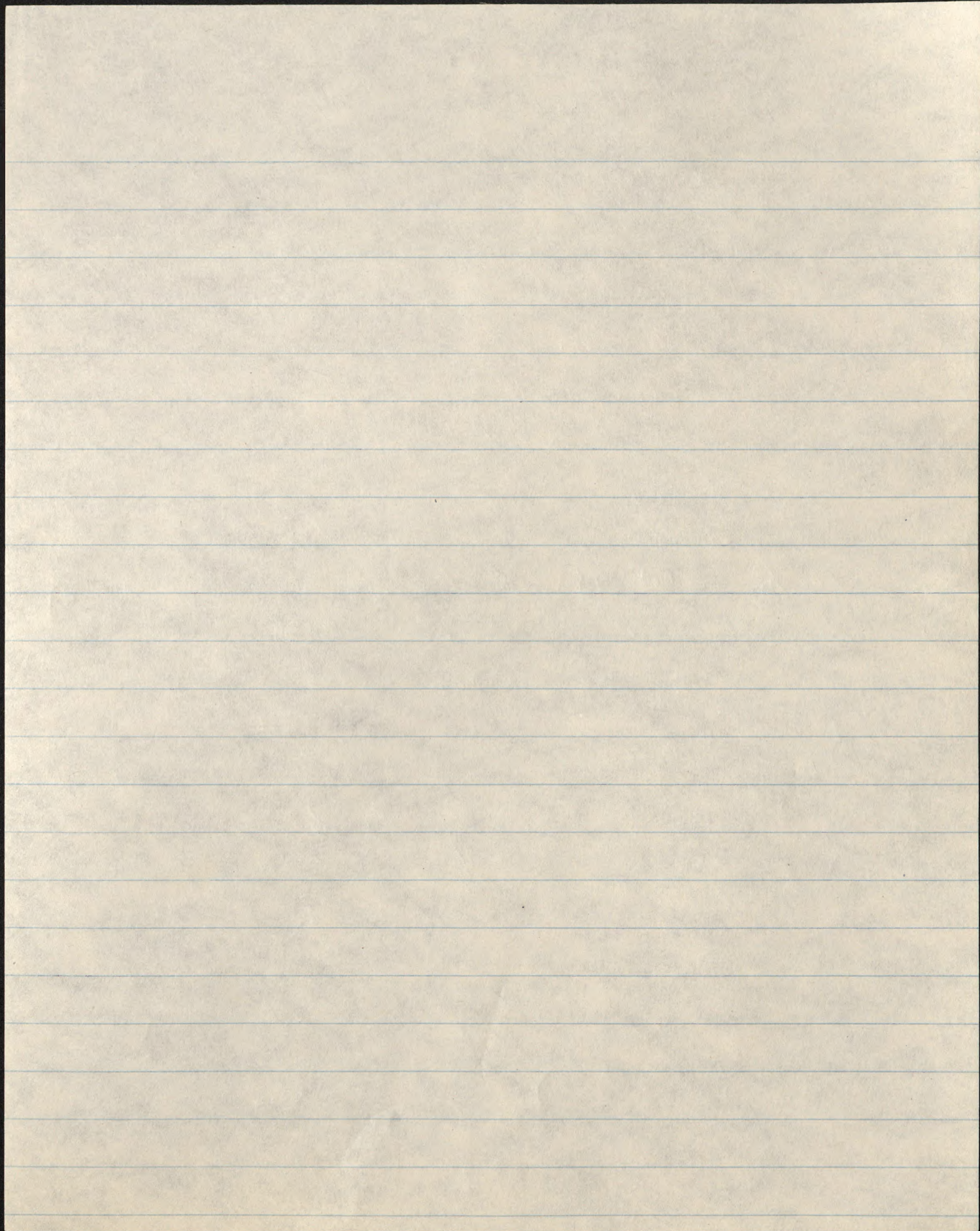
Her known the trap was ~~at~~ 300 yds up a very steep hill slope from the river, indicating that these animals do wander away from the riparian conditions.

One individual was trapped at the 1200 m camp. It was brought in by collectors from the mossy forest.

Another specimen was taken by a collector from 10 km SW Burned Camp at 1500 m. ~~The information on habitat was~~

It is my opinion that these animals inhabit the mossy forest ~~throughout~~ the area. Though they are never ~~found~~ common they are more frequently found near streams, in the ~~as~~ to be caught along all deforested trails through the latter.

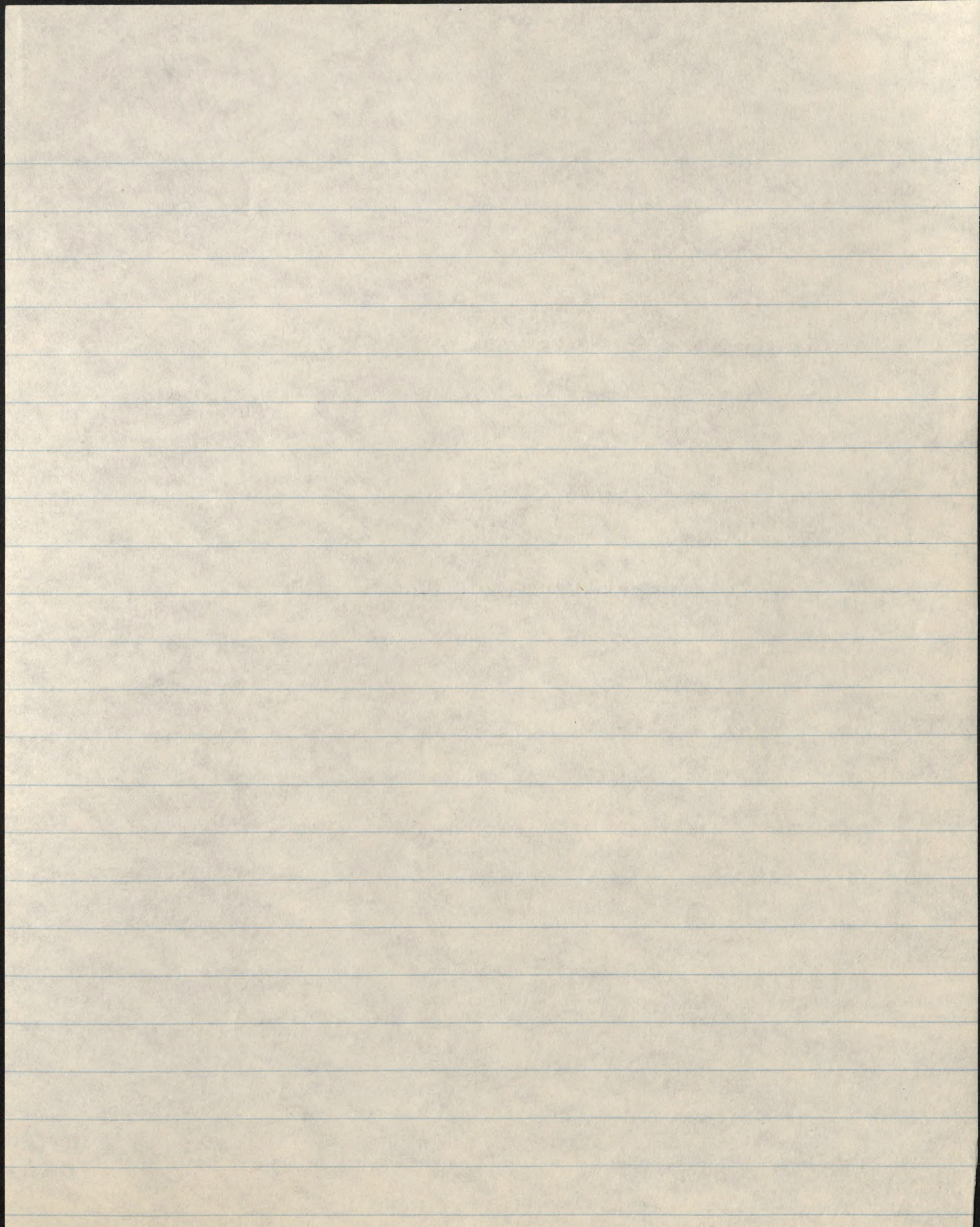






Hydromys chrysogaster - Five individuals were taken from the 850 m camp. These were trapped or snared in obscure runways near a stream. The vegetation of the stream side differed from the adjoining mossy forest in that there was a rather heavy second stage and choppy all-type of growth, <sup>with</sup> much lichen, some of which had been washed in by the over flowing stream. A list of the stomachs <sup>with</sup> contents are as follows. One stomach contained remains of frogs and insects; another contained insect remains; another one frog and other material resembling that of freshly masticated fruit; another material resembling blood; and the other was empty. The remains of a crab near one catch would indicate that probably these too were eaten. The testes of the ♂ were enlarged protruding in a distended scrotum at the base of the tail. One ♀ taken April third contained two large embryos 50 mm or long. Her four mammae (all posterior) were now lactating.



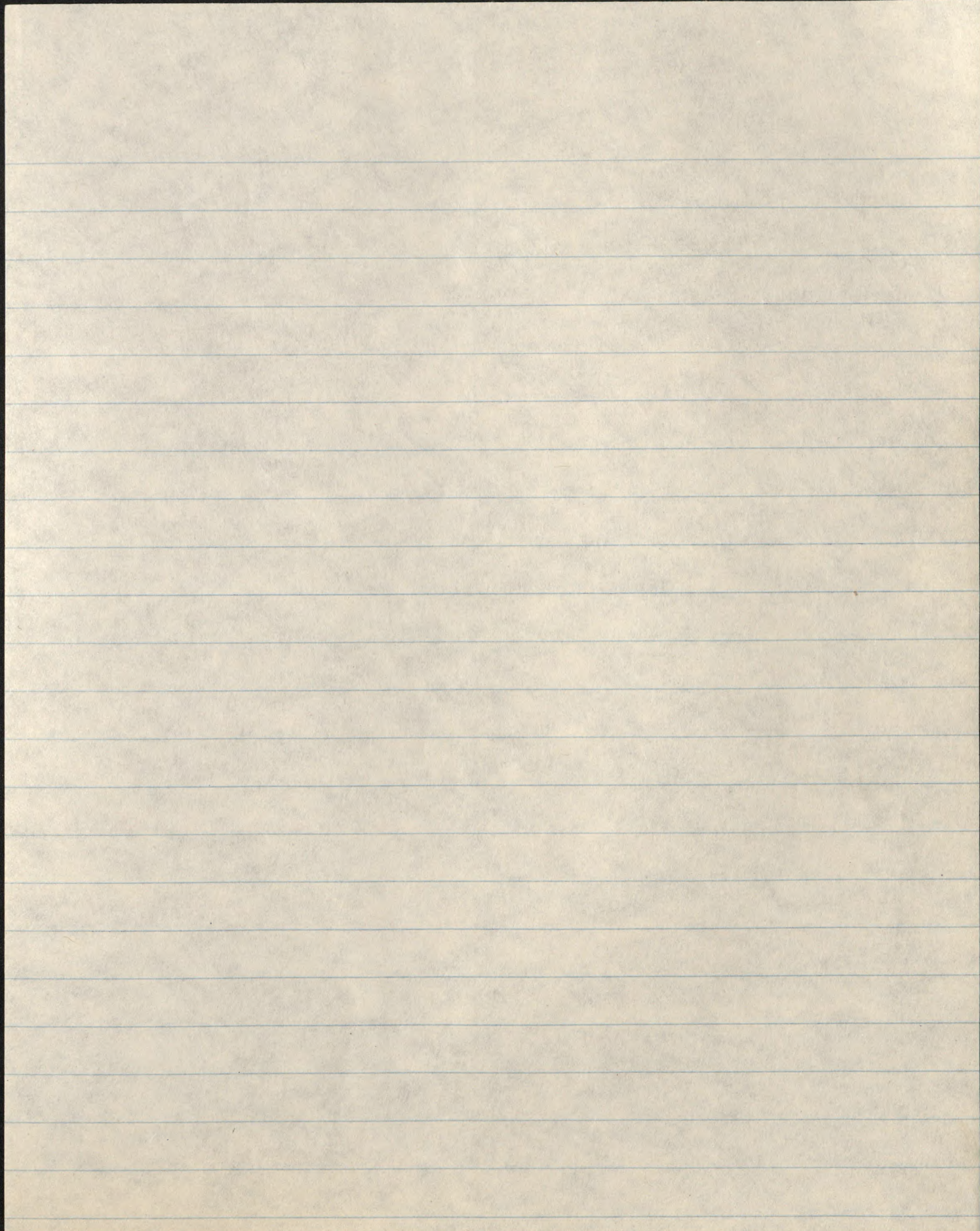




The upper lip as compared with that of Hesperis is less hairy and contains fewer sebaceous.

From Burnham Camp the specimens were taken during the month of April and May. At this time the Idenburg River was in flood and only small strips of land were above water. It was on these islands that the traps which caught these mammals were set. Here the vegetation was that typical of the rain forest with its large trees forming a rather dense canopy. The undergrowth was sparse and the litter for the most part was in an advanced state of decay.







Hydromys habbema. - Twenty-eight individuals were taken from the Lake Habbema camp. The habitat of this small Hydromys was the grassy borders of the lake and its outlet stream. Here the grass grew from 18 to 30 inches high, covering the shore in a narrow strip from 2 to 6 feet wide, between the elevated lip and the forest edge or marsh. Through this fringe of rather dense, coarse grass there were numerous runways about 2 inches in width extending in all directions. It was in these paths that most of these animals were taken. There were numerous well worn paths which led out of the grass over the six to 18 inch high lip of the lake shore. During the dry season, when the lake was down, tracks could be seen along the small sandy beach, and it was here that several individuals were trapped. They apparently frequent the water's edge, picking up insects which blew in. It is quite possible, too, that they swam in the lake among the sedges which grew out of the shallower, peaty lake margin. One one occasion only was an individual taken as far away from the water edge as 11 feet. This individual was caught in a trap placed at the entrance of a hole in a moss clump which had formed about the base of a bush bush some 2 yards away from the lake grass fringe. Three stomachs were



The first thing I noticed when I stepped  
 out of the plane was the humidity. The air was  
 thick and sticky, a stark contrast to the  
 cool breeze I was used to at home. I  
 looked around and saw a sea of people,  
 many of whom I recognized from the  
 airport. They were all dressed in  
 light-colored clothing, some in  
 traditional attire. The scene was  
 bustling and full of energy. I  
 felt a sense of excitement and  
 anticipation as I prepared to  
 explore this new and vibrant  
 city. The humidity was a challenge,  
 but it was also a part of the  
 experience. I took a deep breath  
 and stepped out into the sun.



examined; one contained a small amount of green vegetable matter, another a mixture of plant and animal matter, and the third curdled milk (it was apparently still suckling).

Four individuals were taken at the 3600 m. camp. One individual was taken in a trap set in a small runway through the tall grass clumps above an underground stream. The ground here was quite moist, but there was no visible surface water. It could be heard flowing over the rocks a short distance below the sod. The other three individuals were taken by a collector who said they were trapped in small runways along the grassy stream side.



examined; the following is a summary of the results obtained:

1. The first test was made on a specimen of the material

under the following conditions:

2. The specimen was of the form of a bar, the length of which

was 100 mm. and the diameter was 10 mm.

3. The specimen was held in a vice and the load applied

was 1000 kg. The specimen was held in a vice and the load applied

was 1000 kg. The specimen was held in a vice and the load applied

was 1000 kg. The specimen was held in a vice and the load applied

was 1000 kg. The specimen was held in a vice and the load applied



Hydromys asper. - Three individuals were taken at the 2800 m. camp. Habitat was the mossy beech forest with moss covered undergrowth and litter. The traps in which they were caught were in each case set in rather ill defined runways between fifty and sixty feet from the stream side. The stomachs were empty. The feces were rather large,  $1\frac{1}{4}$  inches ~~wide~~ long by  $\frac{1}{2}$  inch ~~wide~~ thick, containing what appeared to be the remains of insects. A female taken October 24 had no embryo nor were the mammary glands functional.

At the Bele River camp one individual was trapped and ten others were brought in by natives. The habitat was the same as that described for the camp above. Here, however, the trap was 300 yds. up a very steep hill slope from the river, indicating that these animals do wander away from the riparian conditions.

One individual was trapped at the 1200 m. camp. It was brought in by a collector from the mossy forest.

Another specimen was taken by a collector from 10 km. S.W. of Bernhard Camp at 1500 m.

It is my opinion that these animals inhabit the mossy forest area.



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Though never                    they are more frequently found near streams,  
and are to be caught along ill defined trails through the litter.



THEY ARE NOT IN THE MINDS OF THE PEOPLE

AND NEVER

AND ARE TO BE FOUND IN THE MINDS OF THE PEOPLE



Hydromys chrysogaster. - Five individuals were taken from the 850 m. camp. These were trapped and speared in obscure runways near a stream. The vegetation of the stream side differed from the adjoining mossy forest in that there was a rather heavy second stage and a chaparral-type of growth with much litter, some of which had been washed in by the overflowing stream. A list of the stomachs with contents is as follows: one stomach contained remains of frogs and insects; another insect remains; another and other material resembling that of finely masticated fruit; another material resembling blood; and the other was empty. The remains of a crab near our catch would indicate that probably these, too, were eaten. The testes of the male were enlarged, protruding in a distended scrotum at the base of the tail. One ♀ taken ~~in~~ April third contained two large embryos 50 mm. long. Her 4 mammae (all posterior) were non-lactating. The upper lip as compared with that of H. asper is less bulging and contains four vibrissae.

From Bernhard Camp three specimens were taken during the month of April and May. At this time the Idenburg River was in flood and only small strips of land were above water. It was on these islands that



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that the traps which caught these animals were set. Here the vegetation was that typical of the rain forest with its large trees forming a rather dense canopy. The undergrowth was sparse and the litter for the most part was in an advanced state of decay.



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in... 1934... the... was... 1935...

the... in... 1936... 1937...



## Hydromys

Aug. 4 Lake Habbema, Netherlands New Guinea. 3225m.

Caught 1 juvenile in the 392 traps. This individual was taken in one of the mouse traps set in the grassy edge of the lake shore. The traps were set in ~~the~~ a rather large runway through the coarse grass within 2 ft of the lake edge.

Aug 5 Lake Habbema, Netherlands New Guinea. 3225m.

1 individual in 392 traps. This animal appears to be a sub-adult ♀. There were no embryos. The traps in which it was caught were set in the thick grass that borders the western bay. This grass is 2 to 3 ft in height and covers a band varying in width from 2 to 5 ft. It is very dense. Though it is numerous, paths going in every direction through this grass, many of them opening out to the water edge. The stomach of the least contained a small amount of green vegetable matter.

Aug 12 Lake Habbema, Netherlands New Guinea. 3225m

1 individual in 375 traps. This animal was taken in a rat trap set along the heavy grassy fringe of the lake shore. About this portion of the lake (NW shoreline) there is a heavier fringe of grass varying in thickness from 2 to 6 ft. The grass is and often supplemented with reeds in the lake or swampy border of the same. The grass varies in height from 18 to 30 inches and is of a coarse dense character with numerous trails along the stem which usually form a maze of runways rather than a distinct path. Beyond the grassy fringe is a lower less dense grass which may be in small clumps or ~~is~~ a low mat like ~~grass~~ grass. This extends some 50-500 yd back to a forested



hill slope. The trap in which the least was caught was in a rather narrow <sup>(2 ft.)</sup> fringe of this heavier grass. The trap was set <sup>at</sup> ~~rather~~ <sup>set</sup> ~~off~~ <sup>rather off</sup> in from the lake edge (~~at~~ <sup>1</sup> ft. above lake level) in a small runway through the fringe. The runway was about 2 inches in diameter and at the point where the trap was set it led on west to the water edge. Stomach (examined) appeared to have a mixture of plant and animal matter in it.

Aug 14 Lake Habbema, Netherlands New Guinea 3225 m

2 in 375 traps. Both were taken along the lake shore (one on the <sup>north</sup> west side of the bay, the other on southwest side of lake). One was taken on a small peaty mass at the lower edge of the 1st bank of the lake. This peaty mass protruded slightly above the water level and connected with the bank itself. In the water about this region there was a thin growth of reeds extending from the bank 10 ft into the lake. On the bank above the water edge was low grass ~~at~~ with here and there scattered clumps of taller grass. The other specimen (the other of the two) was taken in <sup>in</sup> ~~in~~ the same type of scrubby sited as the one taken on Aug. 12. (ca. water). There was a bank extending above the water level some 1 1/2 or 2 ft. on which was growing the <sup>heavy</sup> border grass of the lake. In the spot where the trap was set this border was about 3 ft. wide. Along from the bank was a low matted grass with <sup>small</sup> scattered clumps of higher (1 ft.) grass. The trap was set in a ~~runway~~ <sup>runway</sup> through the heavy border grass. In this vicinity there are frequent <sup>typical</sup> entrances ~~entrances~~ <sup>entrances</sup> ~~entrances~~ <sup>entrances</sup> ~~entrances~~ <sup>entrances</sup> to the water which appear to be used frequently. It was when such an entrance joined a ~~per~~ <sup>per</sup> ~~main~~ <sup>main</sup> trail that the animal was caught.

Aug 16 Lake Habbema, Netherlands New Guinea 3225 m.

1 in 375 traps. This individual was taken in a trap set 5 ft from the water edge in one of the maze of trails through the heavy grass thickets bordering the lake. Along the water edge the grass gave way to the thin growth of reeds.



## Hydromys

Aug 18 Lake Habbema, Netherlands New Guinea 3225m.

6 in 375 traps. These specimens according to the collector who brought them in were taken in some 40 traps set along the edge of the river outlet of the lake. There is a heavy growth of sedge in the water and a heavy tall grass along the stream bank. The traps were set in the runways through the grass at the outer border of the sedge thickets.

Aug 19 Lake Habbema, Netherlands New Guinea 3225m.

1 in 375 traps. This specimen was taken in the same line as the other specimens taken yesterday. The trap was set in a runway at the region where the reeds and grass meet near the high water line. This little path ran parallel the stream and - if following the edge, that is the path had a defined direction. According to the boy who showed me where some of the specimens were taken yesterday they are caught in traps 1 to 2 ft. away from the water edge in tracks through the grass paralleling the river.

Aug 20 Lake Habbema, Netherlands New Guinea 3225m.

2 in 345 traps. They were both taken in small runways along the edge of the outlet of the lake. Along this sluggish stream there is a border of reeds and on the higher ground above grass. These animals were taken in a runway along the transition from grass to edge a reeds. The trail was distinct and directional and probably used by Stenomys as well as the rodent.

Aug 21 Lake Habbema, Netherlands New Guinea 3225m.

2 in 387 traps. The ♀ which took from the traps was 10 ft from the water edge, the



distances between being low broad with a ground cover of moss which is chopped about the base of the bushes. The animal was caught in a trap placed in a hole in one of the clumps.

Aug 22 Lake Habbema, Netherlands New Guinea 3225 m.  
2 in 382 traps. Both individuals were taken along the lake shore in runway through the heavy border grass near the ~~side~~ long sedge. The traps were set in trails <sup>trails in</sup> near the transition between the grass and the sedge.

Aug 23 Lake Habbema, Netherlands New Guinea 3225 m.  
1 in 384 traps. According to the collector this animal was taken along the lake shore within 2 ft. of the water edge. This juvenile from the looks of the stomach was still suckling its mother.

Aug 24 Lake Habbema, Netherlands New Guinea 3225 m.  
2 in 386 traps. Both were brought in by collectors who took them from traps set along the north west lake shore and outlet stream.

Aug 25 Lake Habbema, Netherlands New Guinea 3225 m.  
1 in 386 traps. Brought in by collector. Probably taken in traps set along north west lake shore on along upper portion of the outlet stream.

Aug 27 Lake Habbema, Netherlands New Guinea, 3225 m.  
3 in 384 traps. Brought in by collector.

Aug 28 Lake Habbema, Netherlands New Guinea 3225 m.  
1 in 384 traps. Brought in by collector. Same conditions as stated Aug. 25.

Aug 29 Lake Habbema, Netherlands New Guinea 3225 m.  
1 in 384 traps. Brought in by collector.



Hydromys talpina

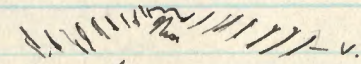
Sept 8 2 km N.C. Wihelmina Top, Netherlands New Guinea; 3800m

(4) 1 in 187 traps. This individual was taken in a trap set in a small runway through the grass above the underground hillside stream. The conditions here were quite moist but there was no visible surface water although water could be heard flowing over rocks a short distance below the surface of the soil.

Hydromys asper

Oct 24 9 km N.C. Lake Habbema, Netherlands New Guinea 2800m.

1 in 216 traps. Taken in runway through the mossy undergrowth of the open mossy forest at the upper stream bank. The trap was set a distance of some 50 ft from the water edge. They are a few things of interest about the animal which should be noted here. The vibrissae are set at an angle to form almost a straight line even with the nose tip of the nose. No shield.

The dung in large  $\frac{1}{4}$  inch x  $\frac{1}{2}$  inch.  a large oval mass of what appeared to be insect remains. There were no emb. seen even though mammary glands functional.

Oct 27 9 km N.C. Lake Habbema, Netherlands New Guinea 2810-2700m.

2 in 245 traps. The adult ♂ was brought in by collector who said it was taken in a runway at the edge of a bog in the second growth salome forest some 50 ft from the stream. The sub adult ♂ was taken in an obscure runway through the litter in the brushy undergrowth of the mossy forest some 60 ft from water edge. The stomachs of both specimens were empty.

Nov 11 Belu R. 18 km N. Lake Habbema, Netherlands New Guinea 2200m.

1 brought in by natives.

Nov 19 Belu R. 18 km N. Lake Habbema Netherlands New Guinea 2200m

1 brought in by natives.



1938  
1939

Nov 21 Bela R. 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
1 brought in by natives.

Nov 25 Bela R. 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
1 brought in by natives.

Nov 26 Bela R. 18 km N Lake Habbema, Netherlands New Guinea 2200m  
3 brought in by natives

Nov 27 Bela R. 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
1 brought in by natives.

Nov 29 Bela R. 18 km N Lake Habbema, Netherlands New Guinea 2200m  
1 brought in by natives

Dec 2 Bela R. 18 km N Lake Habbema, Netherlands New Guinea 2200m  
1 in 213 rat traps. - Brought in by  
Pipeman and so unknown nothing of the species  
habitat. The general area was that of  
forest with relatively thick undergrowth of  
bush and a scant leafy forest floor. It  
is a distance of some 300 yds <sup>down</sup> a very steep  
slope to the river.

Dec 3 Bela R. 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
1 brought in by natives.

Feb 18 6 km SW Bumbard Camp Inderburg R. Netherlands New Guinea. 1200m.  
*Hodomy asper*  
1 in 17 steel traps. Brought in by ~~natives~~ collectors.  
Stomach contained mud etc presumably derived while in trap

Mar. 8 4 km SW Bumbard Camp Inderburg R. Netherlands New Guinea 850m.  
*Hodomy chrysogaster*  
1 in 216 rat traps. Taken in runway through the  
undergrowth of the secondary forest <sup>on</sup> at the upper  
edge of a small stream. Stomach contained material  
resembling blood.

Mar. 24  
1 in 812 snare. Brought in by collector.  
Stomach contained remains of a frog, and some  
other material resembling that of finely masticated fruit.  
Testes enlarged. Habitat flood plain.



Hydromys hirsutus

Apr. 2 4 Km. SW Bernard Camp Shubung R. Netherlands New Guinea 850m.

1 in 208 rat traps. Taken in traps set on a clay ~~long~~ <sup>3.6 x 4 ft</sup> ~~hump~~ <sup>hump</sup> (2 ft high) at the edge of a stream bed. There was a heavy canopy <sup>of forest above vegetation</sup> covering the stream. Although ~~as~~ there was no definite runway over the hump the fire was when covered it ~~was~~ had the appearance of being trapped. There were also the ~~remains~~ remains of a crab in the water nearby. Stomach contained remains of insects. Testes enlarged.

Apr. 3

1 in ~~805~~ 205 rat traps. Brought in by collector. Taken in traps line bordering the river along edge of flood plain. 2 large emb. (see sketches). 4 posterior non-lactating mammary glands. Stomach contains remains of frogs and insects. The upper lobe of the heart as with the other taken in this vicinity has a lobe which protrudes but not to the great ~~as~~ degree as those taken ~~as~~ at the Del. R. and above.

Apr. 6

1 in 1075 snare. Brought in by collector. Stomach was empty. Testes enlarged.

Apr. 27 Bernard Camp Shubung R. Netherlands New Guinea 550m.

1 in 253 rat traps. Taken in forest at edge of lagoon. Here there is only a small strip of land which is not inundated but will be so with a rise of another <sup>5-10</sup> 20 <sub>ft</sub> of water. The ground is very moist.

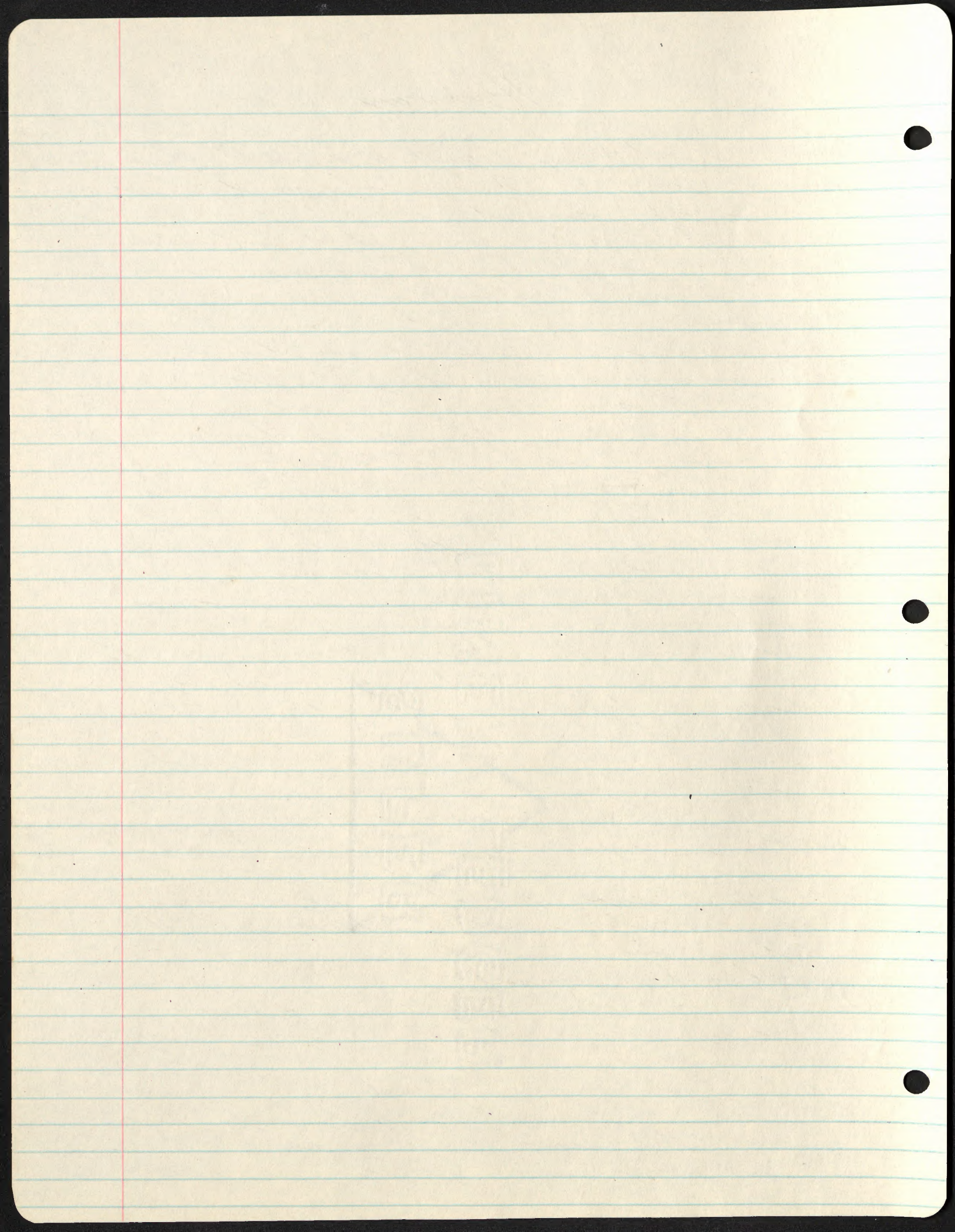
Apr. 30

1 in 799 snare. Taken on upper flood plain. The region is moist and near water due to flooded conditions of the area.

May 7

1 in 1055 snare. Brought in by collector. Taken on the east side of the river on forested banks which remains 1-2 ft above the present flood. <sup>Alutika</sup>







W. B. Richardson  
1938  
1939

## Hyomys

Oct 29 9 km NE Lake Habbema, Netherlands New Guinea 2800 m.  
1 in 29 stub traps. Brought in by collectors who  
said it was caught in traps set on small log crossing the  
stream. The traps were internal (within body cavity) and  
set over an inch in length  $\times$   $\frac{3}{4}$ .

Nov 1 9 km NE Lake Habbema, Netherlands New Guinea 2800 m.  
1 brought in by natives. This individual was  
probably taken at a lower altitude 2300 m.  $\pm$  near  
the native settlements.

Nov 14 9 km NE Lake R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m  
1 brought in by natives.

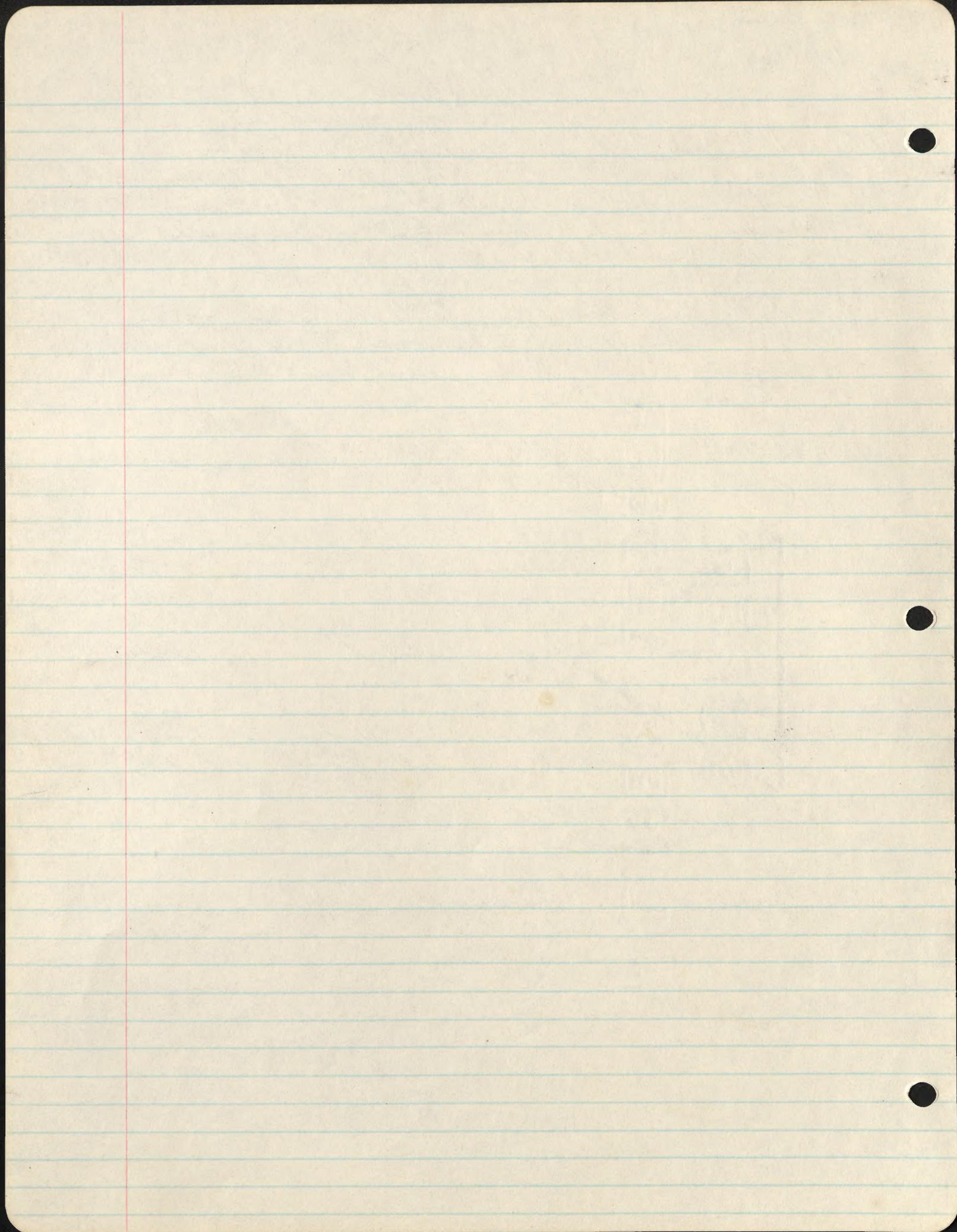
Nov 16 Lake R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
~~1 brought in by natives.~~ 1 in 29 stub traps. Taken  
according to collecting log in stub traps set in runway through  
forest.  
Nov 20: Today I saw the set in which the deer mentioned last  
was taken. It was set in a runway beneath an  
overhanging boulder in the primary forest. Heavy  
growth of timber and an undergrowth of rather open  
brush and moderate amount of <sup>many</sup> rocks and litter.

Nov 29 Lake R. 18 km N Lake Habbema Netherlands New Guinea 2200 m.  
1 brought in by natives.

Apr. 14 Beerland Camp Idenburg N, Netherlands New Guinea 75 m.  
1 in 27 stub traps. Brought in by <sup>WAK</sup> collectors.  
Taken on ~~side~~ <sup>edge</sup> of lower slopes of hills above  
Idenburg plain. Stomach contained remains of  
fruit. Animal very fat. Tender skin. Testes  
enlarged.

T/pe  
7/847  
Zenomyz  
Guba







Wm D. Richardson  
1938  
1939

## Lorentzimys

- Oct 15 9 km NE Lake Habbema, Netherlands New Guinea 2800m.  
1 in 431 traps. Brought in by collectors.  
Probably taken in small runway through brush on edge  
of the mossy forest floor.
- Oct 22 9 km NE Lake Habbema, Netherlands New Guinea 2800m.  
1 in 418 traps. Specimen taken in the  
mossy forest along the ridge where there was little  
undergrowth, the forest floor being covered with  
moss and leaves. The leaves covering in the specimen  
in the nose making a more or less natural  
runway. It was in such a runway that the beast was  
taken. There was no food in the stomach.  
The testes were enlarged indicating maturity although  
much smaller than the ♀ taken on Oct. 15.
- Oct 28 9 km NE Lake Habbema, Netherlands New Guinea 2700m.  
2 in 413 traps. Taken by collectors.
- Nov 14 Belu R., 18 km NE Lake Habbema, Netherlands New Guinea 2200m.  
1 in 308 traps. According to collector  
who brought it in it was taken <sup>in small runway</sup> on forest floor  
near a garden clearing.
- Nov 15 Belu R., 18 km NE Lake Habbema, Netherlands New Guinea 2200m.  
1 in 414 traps. From trap set in forest. Taken  
by collector.
- Nov 20. Today saw the trap in which this animal was caught.  
It was in a small runway at the edge of a bush  
in the primary forest. There was an ~~open~~ undergrowth  
of brush and some litter.
- Nov 24 Belu R., 18 km NE Lake Habbema, Netherlands New Guinea 2200m.  
1 brought in by natives.
- Jan. 12 15 km SW Bernard Camp Idenburg R., Netherlands New Guinea 1800m.  
1 in 425 traps. Individual taken in trap set  
on floor of mossy forest. The region was ~~that~~ had scattered  
large forest trees, moderately thick second story growth and



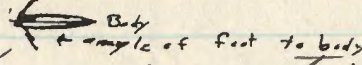
scattered underground. The forest floor, on a side hill slope, had a quantity of bits of logs, rocks, etc. There were however small open spaces with <sup>a charcoal</sup> moss. It was at the edge of such a space beneath a small scraggly shrub that the trap was set in which this beast was caught. The traps were enlarged measuring some 15 m.m. The stomach contained only a small quantity of food which appeared to be that of fruit or tubercous material.

Jan 23 15 km S W Berland Camp Idenburg R, Netherlands New Guinea 1800m

1 in 425 traps. Taken in <sup>the</sup> <sup>open</sup> mossy running about a large tree. The individual was caught by at the <sup>base of the</sup> <sup>tree</sup> in a moss trap and apparently did not injure it in any way seriously. The following are notes made while watching the the beast while held captive in a rice tin with a cloth of excelsior on the bottom for cover. It is apparently a nervously active animal accompanying about the cage and continually quivering the antennae and legs. It apparently desires a dark retreat and when one is found beneath the excelsior is quite content to remain there in a huddled up position for long periods of time. The ears are carried vertically with the opening in a somewhat forward condition. The ears, while the animal is active, are continually quivering that is <sup>a</sup> shifting the opening in different directions to different lateral positions as if to catch all sounds. Preening of the coat was frequent. The lower excisors were used to comb out the fur about the genitalia by pushing the head between the fore feet, pushing the excisors into the fur and <sup>then</sup> <sup>lift</sup> them outward. The hind feet was also used for scratching the area back of the head (nape of the neck) in a fashion similar to that of a dog. While running about the cage both front & hind feet are used and it is not a jumping gait with the fore feet held against the body. Its mode of progress is not unlike that of typical rather except it is not so quick due apparently to



Lorentzimus

the longer hind feet which are turned around to an angle with the body . Even in a resting position the angle is retained to a lesser degree. Frequently reaches its face with its front feet. Accomplish the desired thing rapidly. It pushes its way through the excelsior rather than spend a time looking for an opening. Seldom crawls to the top of the excelsior generally remains at or near the bottom. Frequently attempts to begin one of the corners of the can in an attempt to escape. Just completed a 1/2 minute attempt at jumping out of the can. Then succeeded in jumping over 2 inches in height and generally about 4 inches. The jumps were repeated frequently.

A branch of a small tree cut and the many forked sticks placed in the cage. This insect seems perfectly at home climbing about the sticks or on the wire mesh at the top of the cage. Both the front and hind feet are used in grasping the small limbs, that is they are opposable to each other. The tail is not used except possibly as a balancing organ. It is apparently used with a prehensile organ or as one for support. The animal proceeded down the long hind foot with apparently no difficulty. I have seen it on several occasions swing to a limb below by releasing its grip on the limb, eyes with one hind foot and rather falling hind foot downward and catching the limb with the front feet. As soon as front feet are secure the hold with the hind feet to its previous perch is relinquished.

Mar. 1 10 km. SW Bernard Camp, Haining P. Netherlands New Guinea 1500 m.

Following are notes on living caged individual. Activities when first observed consisted of a jumping and scurrying type of locomotion about the bottom of



the cage. Now, this evening 8:00, this same animal  
is less active unless disturbed in some manner.  
It buries its nose on top of the excelsior floor lying  
and moves its head or twitches its ears only slightly  
and occasionally. The ear when touched with  
a wire rapid reaction of a movement of the  
head and sometimes body to one side and then  
the <sup>return to</sup> examination with nose and vibrissae toward the point.  
Touching the vibrissae brings a rather slow  
reaction to the examination of the wire. The  
tail when touched lightly is ignored when  
pursued the animal turns about very rapidly  
for the wire examination. Reaction to light  
When least is settled in one corner of the  
cage and intensity of light is increased  
it apparently is negatively phototaxic,  
that is no reaction. However, when disturbed  
it seeks the darker portion of the cage in  
which it ~~seems~~ <sup>seems</sup> to settle down for its period  
of inactivity. Blow ones breath on the  
animal disturbs it slightly, sufficiently to make  
it turn its head and twitch its ears.  
Rubbing the fur with the end of the wire is  
only ~~slightly~~ <sup>slightly</sup> noticed at first but as  
the rubbing continues it seemingly disengages  
preening is carried on <sup>is</sup> periodically. The  
front and hind feet, as well as the teeth are  
employed. With a very rapid forward kicking or  
scratching motion ~~the~~ with the hind feet the  
shoulders <sup>side of the wire</sup> and <sup>upper portion of the back</sup> are preened. The fore feet  
are used in preening the hair about the rump  
by a clawing motion. They are also used in working  
the fur and in aridging the teeth in preening  
hair about genitalia and belly. The teeth, aside from  
that mentioned are employed in preening the  
area about the mid back. The preening can be  
stimulated by scratching the animal with the end  
of the wire. Hind feet also used in preening about subnasal  
and in front of eye. Teeth used on hips. During a period  
of activity when the animal was looking for a means



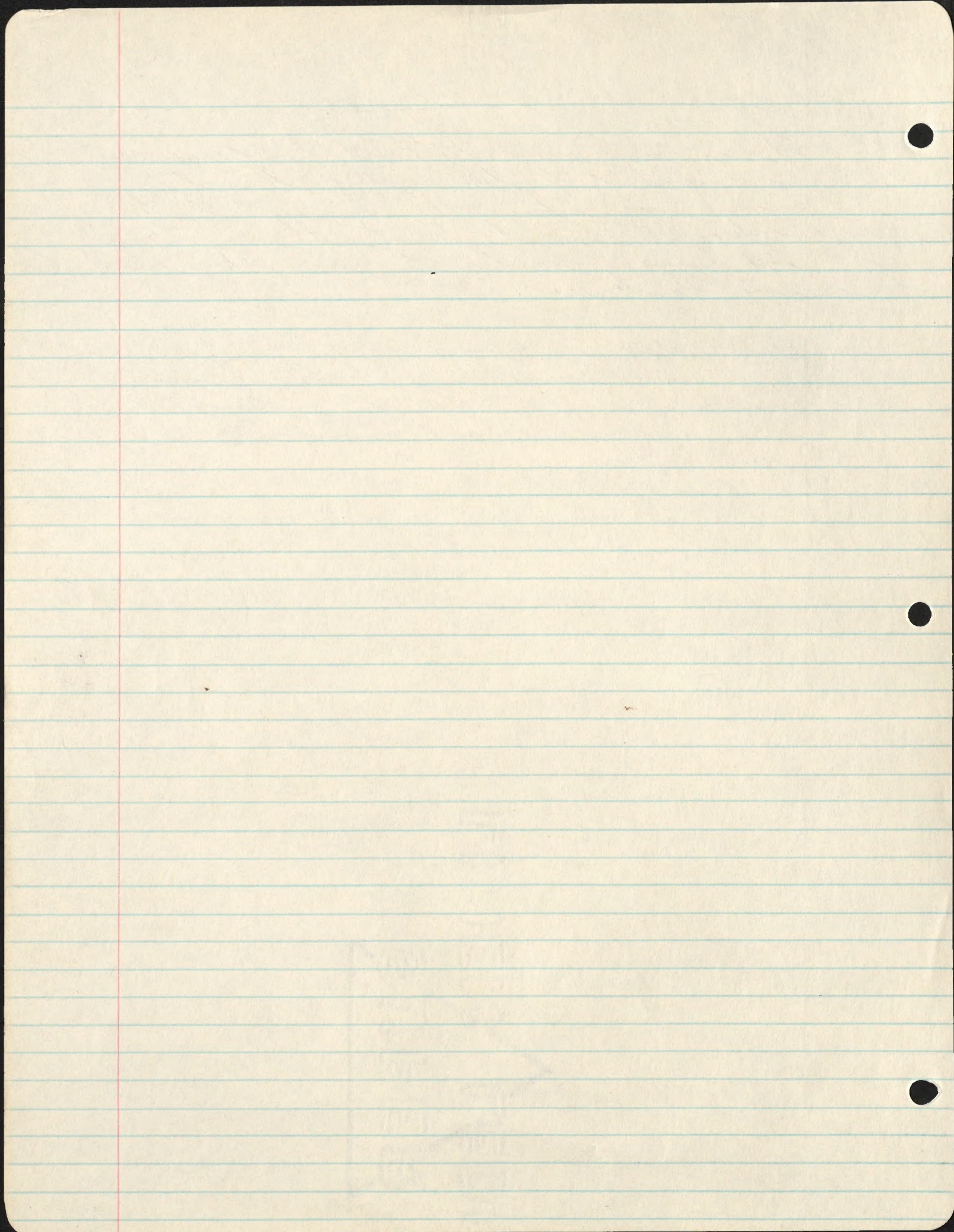
Lorentzimys

of escape. Hoped several times about top of excavation. Spent most of the time crawling through excavation but infrequently coming to the surface. It seems to push its way through not digging or pushing the wood fibers aside with the forepaws.

Apr. 2 4 Km. SW Bauhau Camp Okening R., Netherlands New Guinea 850 m.

1 in 125 mouse traps. Brought in by collector. Taken in trap set on leaf litter below flood plain vegetation. Stomach contained remains of plants.











patch of sub-alpine forest and to the other  
open grass land. There were trails about the  
forest as well as, though the grass showing  
that some large animal did inhabit the  
region. Near by were two Pigeon nest  
traps (dead falls). The stomach of the least  
had a quantity of finely ground up plant  
material. Brown on examining it with a  
hand lens believed it to be of herbivorous plants  
rather than grass although some of the latter  
might be present. The testes were  
enlarged indicating <sup>that</sup> the animal ~~it~~ was adult.

Nov. 1 Lake Habbema, Netherlands New Guinea 2800m.

1 brought in by natives. This specimen came  
in with Pigeons, and Pigeons. They were quite  
possibly taken below, near the village of  
the natives 2300m. The tail of this  
least was interesting in that it was  
curved dorsally in much the same manner  
as Pigeons but with a greater loop.

Nov. 5 Lake Habbema, Netherlands New Guinea 2800m.

1 brought in by natives who according to  
their signs brought it down from above.  
They also had a piglet which had eggs  
is a bird of timber line or higher. This would seem to  
indicate that the least, which is similar to  
the Habbema sp., was taken at a somewhat higher  
altitude.

Nov. 8 Bele River 18 km N Lake Habbema, Netherlands New Guinea 2200m.

1 brought in by natives. I have neglected to  
mention in the <sup>3</sup> previous specimens that the tail  
curled dorsally from a half loop to a loop and a  
half maximum.

Nov. 9 Bele R., 18 km N Lake Habbema, Netherlands New Guinea 2200m.

1 brought in by natives.



Mallomys

Nov. 15 Beli R. 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
1 brought in by natives. Dorsally curved tail.

Nov. 17 Beli R. 18 km N Lake Habbema, Netherlands New Guinea 2200m  
2 brought in by natives.

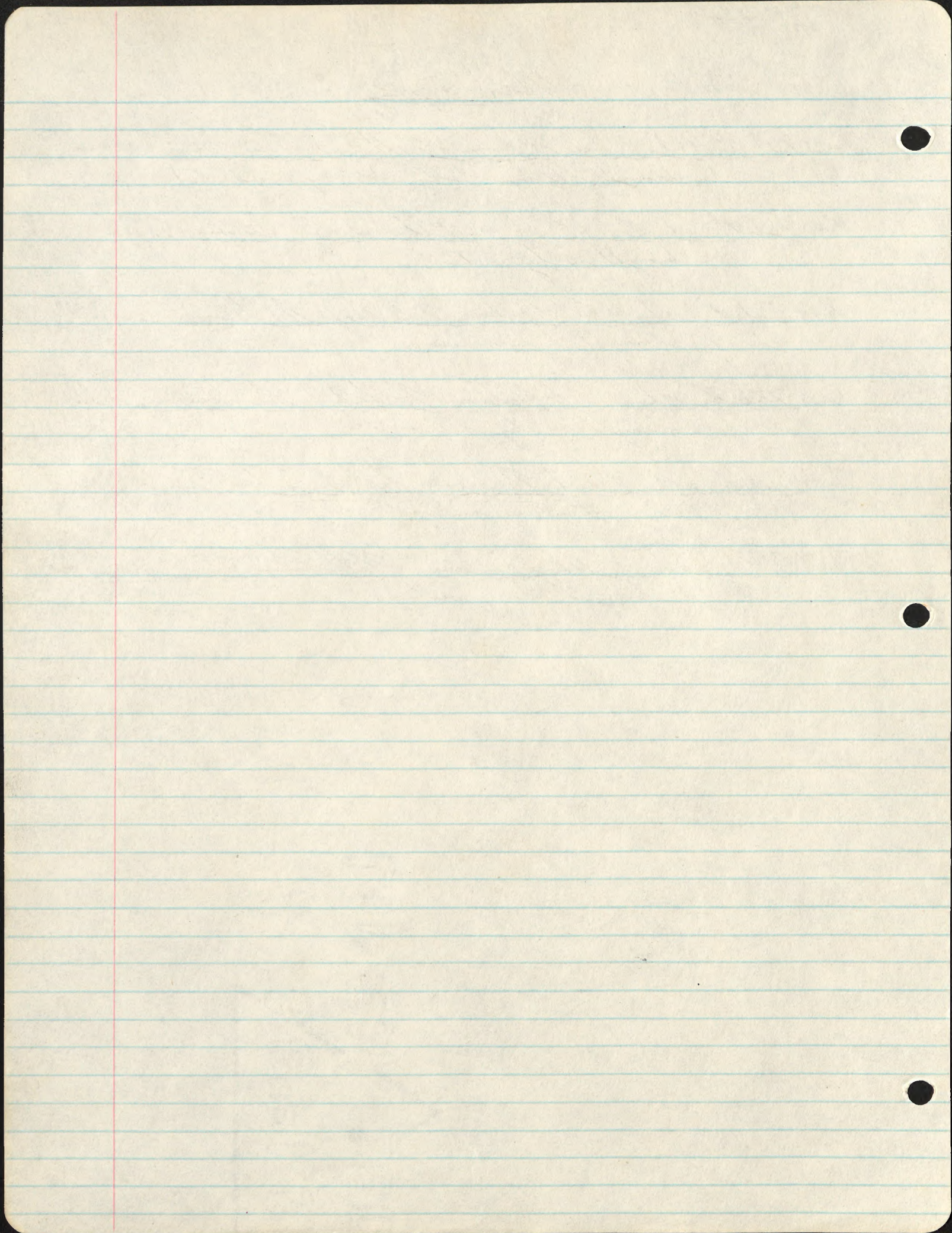
Nov. 18 Beli R. 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
1 brought in by natives.

Nov. 25 Beli R. 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
2 brought in by natives.

Nov. 30 Beli R. 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
1 brought in by natives.

Dec. 2 Beli R. 18 km N Lake Habbema, Netherlands New Guinea 2200m  
1 brought in by natives.







Wm. S. Richardson  
1938

## Melomys

June 14 Hollandia, Netherlands New Guinea

Caught 1 individual in the 100 traps. It was caught in a runway beneath a low growing *Pondanus* plant. The hill slope was steep and poorly vegetated. The vegetation consisted of small trees and semi-lush undergrowth. There was a rather thick mat of leaves covering the thin redish brown soil. The only apparent evidence of mammals in this region was the short trail going in places and beginning to replace one which any small mammal might use in passing along beneath the underbrush rather than the *Pondanus*.

June 15 Hollandia, Netherlands New Guinea

Caught another *Melomys* in the same vicinity and in the same type of surroundings as the above. It was not however caught beneath a *Pondanus* but rather in a <sup>small</sup> trail through a loose tangle of litter. Trails seem to be used only in the more difficult regions for these animals travel over.

June 16 Hollandia, Netherlands New Guinea

Obtained three specimens from the 200 traps. They were taken in the hill set south west of Hollandia, from the same line that the previous ones were taken from. I did not remove them from the set. The peculiar thing was that each of the three had been gnawed into over the shoulder by another small animal. The gnawing was through the back, just behind the shoulder, into the pleural cavity. One embryo was taken from one and two from the other two animals. These are preserved in alcohol. (Nos. 4013, 4014, 4015)



June 17 Hollandia, Netherlands New Guinea.

Caught 1 individual in the 200 traps. The trap in which it was caught was set at the edge of a grassy clump bordering a low scrubby second growth forest. There are numerous small paths through the clump and neighboring chrysom that I assume are used by these animals. These animals cannot be very abundant however for there are approximately 75 traps set in just such places, having been set there for two nights. The forest is in the lower small flood plains of a small river to the north east of Hollandia (1/2 kilometer). Three (3) large embryos were taken from the animal.

The native names for these animals are -

Tekus Kitchil - Malay

Pomglu - Sentani

Mesing - Tobati

June 18 Hollandia, Netherlands New Guinea

Caught 1 individual in the 200 traps. It was caught in a trap set in a little trail which skirted a little bush (indistinct trail). This was in a second growth forest which covered a hill slope. Beneath the forest proper there were clumps of bush or undergrowth, lichen spots, and on a few spots had a rather open forest floor. There were small jagged limestone outcrops which however do not offer shelter. The soil is a rich red laterite varying in depth and with a <sup>thin</sup> cover of leaves and humus.

June 24 Hollandia, Netherlands New Guinea

Caught 1 individual in the 391 traps. It was caught on the jungle floor where there is a rather thick undergrowth and lichen. The trap was situated about 1/2 mi. south west of Hollandia on a near the limestone ridge.



## Melomys

June 25 Hollandia, Netherlands New Guinea.

Two individuals caught in the 391 traps. One was taken by the Papuan collector the other by the Dyak collector. They were both taken south, west of Hollandia in a cut over rain forest. The specimen taken by the Dyak was badly eaten by ants before it was removed from the trap.

June 28 Hollandia, Netherlands New Guinea.

The Dyaks caught two individuals in their trap which was so badly eaten by ants that only the skulls were saved.

June 29 Hollandia, Netherlands New Guinea.

The Papuan collectors found one of this species in the jungle during their daily hunt.

July 2 Hollandia, Netherlands New Guinea.

Yesterday afternoon I found the decomposing remains of one of this genus. It was lying in the sand beneath a shalving rock 10 ft. east of the small river that flows south eastward back of the Hokkaido home. The country in general was that of a rain forest through which, in a steep reverse, passed a boulder studded small river.

July 3 Hollandia, Netherlands New Guinea.

See general account.

July 8 Hollandia, Netherlands New Guinea.

One caught in the 442 traps. It was taken in one of the traps set by the Papuan collector in the cut over jungle south of Hollandia. Its stomach was filled with a vegetable material resembling pulverized fruit.



Oct 12 9 km NE Lake Habbema, Netherlands New Guinea 2800m.  
3 (2 sp) in 350 traps. The larger of the  
two species was taken in a trap set in the  
runway at the upper edge of a mossy clump  
about the base of a tree. The general region  
was that of a pandanus grove in the mossy  
forest. The (one individual) the species was taken  
in the same pandanus grove but in a trail  
through the <sup>mossy</sup> forest litter.

Oct 13 9 km NE Lake Habbema, Netherlands New Guinea 2800m.  
2 in 431 traps. Both individuals  
were brought in by collectors. Taken in  
mossy forest, and probably in runways  
in or near pandanus ~~tree~~ groves.

Oct 14 9 km NE Lake Habbema, Netherlands New Guinea 2800m  
1 in 431 traps. Taken in trap set in  
runway over the mossy ground cover of the forest.  
The conspicuous thing was the absence of litter  
in the immediate vicinity and the mossy ground  
cover ~~was~~ which the trout passed. The  
general region was that of the edge of a  
pandanus grove in the mossy forest.

Oct 15 9 km NE Lake Habbema, Netherlands New Guinea 2800m.  
3 in 431 traps. Three of the smaller  
species brought in by collectors.

Oct 16 9 km NE Lake Habbema, Netherlands New Guinea 2800m  
3 in 431 traps. The two smaller specimens (small  
sp.) brought in by collectors. Larger sp. taken in runway  
at the edge of a fallen log in the heavy litter  
of a pandanus grove in the mossy forest.

Oct 17 9 km NE Lake Habbema, Netherlands New Guinea 2800m  
1 in 431 traps. The smaller specimen was  
taken by collectors from their trap line. The larger  
was taken by a netter. It had apparently been  
caught in a lead fall.



## Melomys

- Oct. 18 9 km NE Lake Habbema, Netherlands New Guinea, 2800m.  
4 in 425 traps. The small species is fairly common in the forest undergrowth and litter, mossy covered logs etc.
- Oct. 19 9 km NE Lake Habbema, Netherlands New Guinea, 2800m.  
1 in 425 traps. Taken in runways through litter in open bushy undergrowth of the mossy forest.
- Oct. 20 9 km NE Lake Habbema, Netherlands New Guinea, 2800m.  
1 in 220 traps. Taken in runway beneath moss covered rotting log.
- Oct. 21 9 km NE Lake Habbema, Netherlands New Guinea, 2800m.  
4 in 447 traps. In the smaller specimens of the smaller species were taken in runway through the litter in the bushy or grassy areas of the mossy forest. The larger sp. was brought in by collectors. It contained a stomach filled with the fleshy parts of fruit, fungus and the like.
- Oct. 22 9 km NE Lake Habbema, Netherlands New Guinea, 2800m.  
1 in 418 traps. Taken in bushy thicket of the grassy areas in mossy forest.
- Oct. 23 9 km NE Lake Habbema, Netherlands New Guinea, 2800m.  
2 in 418 traps. The smaller species taken in open mossy forest with bushy undergrowth and litter. The other, the larger species, was brought in by collectors.
- Oct. 24 9 km NE Lake Habbema, Netherlands New Guinea, 2800m.  
2 in 414 traps. Taken in open mossy forest where there is a quantity of litter and undergrowth.
- Oct. 25 9 km NE Lake Habbema, Netherlands New Guinea, 2800m.  
1 in 414 traps. Brought in by natives. It was apparently taken in a dead fall from the flattened appearance of the beast. It was probably taken at a lower altitude.



Oct 26 9 km N.E. Lake Habbema, Netherlands New Guinea 2800 - 2700 m.

♂ in 409 traps. This <sup>(the smaller)</sup> species seems to prefer the type of habitat in which there is an undergrowth of bush as well as better on the floor of the mossy forest. Occurs both in mossy forest and second growth along the bank slopes of the stream side.

#5239 a new species for this camp was taken from a trap set in a runway at the base of a log in a bushy littered spot at the edge of the second growth of mossy forest.

Oct 27 9 km N.E. Lake Habbema, Netherlands New Guinea 2800 m.

1 in 413 traps. Specimen taken in trap set in runway beneath mossy log in the undergrowth of the mossy forest.

Oct 28 9 km N.E. Lake Habbema, Netherlands New Guinea 2700 m.

2 in 413 traps. Brought in by collectors.

Oct 29 9 km N.E. Lake Habbema, Netherlands New Guinea 2700 m.

2 in 413 traps. Brought in by collectors.

Oct 30 9 km N.E. Lake Habbema, Netherlands New Guinea 2800 m.

3: 2 caught in 413 traps, 1 brought in by a native.

Oct 31 9 km N.E. Lake Habbema, Netherlands New Guinea 2800 m.

3 in 413 traps. One individual taken in trap set in trail through littered undergrowth of the same "mossy forest". The other 2 were brought in by natives.

Nov 1 9 km N.E. Lake Habbema, Netherlands New Guinea, 2800 m.

2 in 413 traps. Brought in by collecting boys.

Nov 2 9 km N.E. Lake Habbema, Netherlands New Guinea 2700 m.

1 in 197 traps. Brought in by collectors.

Nov 3 9 km N.E. Lake Habbema, Netherlands New Guinea 2700 m.

1 in 257 traps. Brought in by collectors.



# Melomys

- Nov 4 9 km NE Lake Habbema, Netherlands New Guinea 2800-2700 m.  
3 in 347 traps. #5351 taken near the stream  
in the broad litter of the mossy forest. The trap  
was set in a small runway about the end of a fallen  
log. #5352 taken in an open runway ~~through~~ <sup>over</sup>  
fallen leaves covering the floor of the same forest.  
The other individual brought in by natives collectors.
- Nov 5 9 km NE Lake Habbema, Netherlands New Guinea 2800-2700 m.  
4 in 347 traps. The larger species being taken  
in runways though underground in open forest floor.  
Conditions usually moist. The smaller species taken  
in the littered underground of the mossy forest.
- Nov 6 Bele R., 18 km NE Lake Habbema, Netherlands New Guinea 2200 m.  
5 brought in by natives.
- Nov 7 Bele River, 18 km NE Lake Habbema, Netherlands New Guinea 2200 m.  
1 brought in by natives.
- Nov 8 Bele River, 18 km NE Lake Habbema, Netherlands New Guinea 2200 m.  
2:1 in 218 traps #5393 brought in by natives. The  
individual taken in trap was caught in runway though  
forest litter at the edge of a sand slip.
- Nov 9 Bele River, 18 km NE Lake Habbema, Netherlands New Guinea 2200 m.  
4: 1 in 308 traps, 3 brought in by natives. The  
individual taken in trap #5415 was trapped in the litter,  
beneath a log, in the heavy forest. Scattered bits  
of underground in the vicinity.
- Nov 10 Bele R., 18 km NE Lake Habbema, Netherlands New Guinea 2200 m.  
6:4 brought in by natives, 2 taken in 308 traps.
- Nov 11 Bele R., 18 km NE Lake Habbema, Netherlands New Guinea 2200 m.  
7: 1 in 308 traps, 6 brought in by natives.
- Nov 12 Bele R., 18 km NE Lake Habbema, Netherlands New Guinea 2200 m.  
5: 1 in 308 traps 4 in by natives.



- Nov 13 Bele Riv., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
 1 in 29 stick traps 308 wooden traps. Brought in by  
 collecting ~~boy~~ boy. Taken in forested area.
- Nov 14 Bele R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
 12 brought in by natives.
- Nov 15 Bele R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
 19: 2 in 416 traps, 17 brought in by natives  
 Those in traps # 5614 + # 5615 were taken by collector  
 in the heavy forest.
- Nov 16 Bele R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
 6: 4 brought in by natives 2 in 414 traps.  
 # 5653 and # 5654. Taken in forested region.
- Nov 17 Bele R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
 17: 15 brought in by natives. 2 taken in 414 traps  
 # 5693 + # 5694 brought in by collector from forested  
 area.
- Nov 18 Bele R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
 27: 26 brought in by natives. 1 in 416 traps. # 5765  
 taken in forested area. The series prepared today  
 showed clearly that the what I believed possibly  
 to be two sp. in sexual differences. The ♂ tail,  
 when adult is light colored (whitish) ventrally and  
<sup>grayish brown</sup> ~~dark~~ colored dorsally. The ♀ on the other hand, when adult,  
 is dark <sup>grayish brown</sup> colored dorsally and ventrally and the tail scales  
 appear to be more pronounced. The young in  
 both cases resemble that of the ♂
- Nov 19 Bele R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
 22 brought in by natives.
- Nov 20 Bele R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
 20 brought in by natives.
- Nov 21 Bele R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
 16 brought in by natives.



## Uromys

Nov 22 Belu P., 18 km N Lake Habbema, Netherlands New Guinea 2200m

15: 13 brought in by natives, 2 taken in 404 traps.  
Those in traps were taken in small clear runways  
through the open undergrowth and litter on the leafy  
forest floor.

Nov 23 Belu P., 18 km N Lake Habbema, Netherlands New Guinea 2200m.

23: 22 brought in by natives; 1 taken in 404 traps.  
The latter was taken in a forested area where there  
was a thin undergrowth of grass and scattered  
litter. There <sup>was</sup> an ill-defined trail beneath  
the roots of a Pandanus.

Nov 24 Belu P., 18 km N Lake Habbema, Netherlands New Guinea 2200m.

16 brought in by natives. One individual, <sup>a small woodhoop</sup>  
not part of a burrow, <sup>was</sup> taken in traps set  
in forested area where there was an open bushy undergrowth,  
and scattered litter.

Nov 25 Belu P., 18 km N Lake Habbema, Netherlands New Guinea 2200m.

18 brought in by natives. One specimen, discarded,  
of the small forest species was taken in a small runway  
through the open undergrowth of the same forest. Leafy  
ground cover.

Nov 26 Belu P., 18 km N Lake Habbema, Netherlands New Guinea 2200m

4 brought in by natives.

Nov 27 Belu P., 18 km N Lake Habbema, Netherlands New Guinea 2200m.

12: 11 brought in by natives; 1 <sup>#6172</sup> in 404 traps.  
Taken by collector in open forested area with  
ground cover of leaves and litter and open undergrowth.

Nov 28 Belu P., 18 km N Lake Habbema, Netherlands New Guinea 2200m.

1 albino brought in by natives.

Nov 29 Belu P., 18 km N Lake Habbema, Netherlands New Guinea 2200m.

8 (2 discarded in 411 traps). This habitat  
seems to be that of the large forest



where there is undergrowth, usually rather thin,  
litter and a leaf covered forest floor. They  
are caught in traps set in runways over the leafy  
forest floor, and about the litter and among the  
bases of the brush.

Dec 1 Bali R. 18 km N Lake Halibawa, Netherlands New Guinea 2200m.

1 in 399 traps. Taken in same forest  
where there was an undergrowth of shrubby bamboo and  
rotten dominated the shrubby. Leafy forest floor and  
scattered logs and small litter.

Dec 2 Bali R. 18 km N Lake Halibawa, Netherlands New Guinea 2200m.

23: 19 brought in by natives, 4  
taken in 399 traps. Of the two specimens which  
I removed from the traps (1 large sp. 1 small sp.) both were  
taken in forest undergrowth where there was litter  
accumulation and a leafy forest floor.

Dec 3 Bali R. 18 km N Lake Halibawa, Netherlands New Guinea 2200m.

2 brought in by natives.

Dec 9 Balim R. Netherlands New Guinea 1600m.

1 brought in by natives.

Dec 10 Balim R. Netherlands New Guinea 1600m.

11 in 199 traps. Taken in several types of  
cover, that of solid cane grass along a small wash,  
in the thick grass of the abandoned gardens, and the  
mixed grass, cane grass and shrubs along a wash.  
There are individual runways. One nest, apparently of this sp.,  
was found about 2 ft off the ground in a very thick clump of  
grass. It was a ball of grass some 4 or 5 inches in  
diameter with <sup>an</sup> entrance at the bottom and another near the  
top. There was no lining, just a ball of grass blocks.

Dec 11 Balim R. Netherlands New Guinea 1600m.

18 in 384 traps. Taken in a about abandoned  
gardens where the <sup>basal</sup> vegetation consist of <sup>mixed</sup> grasses and brush.  
Usually in obscure runways.



## Melomys

Dec 12 Balim River, Netherlands New Guinea 1600 m.  
9 in 380 traps. Taken in an about old garden  
where there is ~~an~~ grass - mixed grass and broad cover vegetation.  
The mixed cover seems to be preferable.

Dec 13 Balim R. Netherlands New Guinea 1600 m.  
9: 1 in 380 traps. Brought in by collectors. 8 brought in  
by natives.

Dec 14 Balim R. Netherlands New Guinea 1600 m.  
4: 3 in traps (370). 1 in by natives. Those in traps  
were taken in grassy cover with canopy of casuarina or fig.  
Special note should be made of #7211, which was taken in  
trap set in obscure runway through the grass at the  
lip of the river bank. Here there is an open growth  
of casuarina and fig trees as well as scattered clumps  
of cane grass.

Dec 15 Balim R. Netherlands New Guinea 1600 m.  
10: 3 by natives. 7 in 370 traps. Those taken in  
traps (both sp.) were taken in grassy patches along  
the river bank. Rather in taken in similar  
spots but its habitat seems to be one of a  
more pure grassy area while that of Mellomys  
is more or less among broad areas, rock outcrops, and  
secondary growth forest.

Several days ago one of the smaller species  
was taken in a trap set in a fig tree some  
3 ft above the ground. The tree certainly had immature  
fruit.

Dec 16 Balim R. Netherlands New Guinea 1600 m.  
8: 1 by natives, 5 in 357 traps. 4 of the 5 were  
taken on a hill slope, an old garden clearing with rocks,  
grass and scattered low growing bushes.

Dec 17 Balim R. Netherlands New Guinea 1600 m.  
2 in 357 traps. 1 individual caught on a grassy  
hill slope with numerous boulders and limestone outcrops.



1939

Dec 18 Balim R. Netherlands New Guinea 1600 m.  
3 in 357 traps. Brought in by collector.

Dec 19 Balim R. Netherlands New Guinea 1600 m.  
1 in 357 traps. Brought in by ~~collector~~ collector.

Jan 10 15 km S W Beand Camp Denby River, Netherlands New Guinea 1800 m.  
2 in 232 traps. Taken in the mossy forest.  
One individual in a trap set beneath an open shrub on a very mossy forest floor. The other was taken beneath a clump of roots at the base of a tree. In each case the traps were set in an obscure runway.  
The forest was heavy - scattered large trees, with thick second story and scattered undergrowth. Much litter in the region such as fallen and decaying trees.

Jan 11 10 in 425 traps. This included 3 species.

The larger sp. was brought in by collector who says it was caught at the edge of a fallen log near a hole which went under said log.  
The general area is that of mossy forest with moderately thick second story growth and scattered undergrowth among the more covered debris of fallen logs. The two smaller species were taken in practically identical ~~open~~ habitats as near as I could determine that in the mossy forest under logs, about holes and over open more covered forest floor. There seems to be a slight tendency for the grey <sup>[Pseudohyomys]</sup> sp. to inhabit the more open areas which the brown seeks cover of logs, holes, etc.

Jan 12 5 in 425 traps. Of the two <sup>small</sup> species taken in this vicinity the grey <sup>[Pseudohyomys]</sup> sp. seems to inhabit the mossy forest floor when there is cover of undergrowth. The small brown species inhabits the area of more litter being taken frequently beneath logs or about the base of trees with exposed aerial roots. It in this respect tends to inhabit similar habitats of Strombos.

Jan 14 1 in 425 traps. Brought in by collector.



# Melomys

Jan 15 15<sup>th</sup> S W Bernhard Camp Idubing R. Netherlands New Guinea 1800m.

6 in 420 traps. Both species were taken in more or less protected spots, that is cover, such as beneath logs, dead stumps, and under or about root bases of trees. This may be due to the heavy rain which necessitated that these animals search for food as well as travel in the drier areas. The larger species in particular was in each case taken in small runways beneath moss covered logs. These runways were completely draped in by moss hanging from the sides of the logs with the only <sup>obscure</sup> small opening at which the traps were set.

Jan 16 5 in 420 traps. Brought in by collector.

Jan 17 5 in 419 traps. A majority of the individuals taken today were caught in small runways through small bush thickets or litter.

Jan 18 1 in 421 traps. Taken in runway <sup>on mossy</sup> forest floor at base of large tree. Undergrowth in immediate vicinity.

Jan 19 1 in 421 traps. Brought in by collector.

Jan 20 2 in 421 traps. The large sp. was brought in by collector. The small brown species was taken in a small runway at the edge of an undergrowth thicket in the moss forest.

Jan 21 2 in 421 + 28 traps. One individual brought in by collector the other taken <sup>in stubby cut in</sup> in runway beneath a fallen log. The path appeared to be well used and quite probably by some larger mammal such as *Peromyscus*. The area in general was that of a littered mossy forest floor.

Jan 22 1 in 421 traps Brought in by collector.

Jan 23 1 in 421 traps " " "

Jan 25 1 in 28 still traps " " "

Jan 26 2 in 419 traps. Taken among brush litter in a small runway over the forest floor.

Jan 27 1 in 228 traps. Brought in by collector.

Jan 28 1 in 228 " " "

Jan 29 " " 228 traps Brought in by collector.

Jan 30 1 in 228 " " "



Feb 1 18 km SW Bernard Camp Humberg R. Netherlands New Guinea 2150 m.

1 in <sup>143</sup> traps. Caught in trap set in small runway over the ~~grass~~ moss at the base of shrubs on the steep ~~or~~ brushy hill slope. This brushy habitat is peculiar to a small area about the top of a hill. It is on a very steep rocky slope where soil and climate apparently prevent ~~any~~ typical mossy forest conditions.

Feb 2 2 in 227 traps. The smaller sp. was taken in the same trap as the individual taken on Feb. 1. The larger species taken in a rather low mossy forest. Heavy moss covering trees and steep hill slope.

Feb 3 1 in ~~227~~<sup>227</sup> traps. Brought in by collector.

Feb 5 2 in 411 traps. Taken in obscure runways over the forest floor near or at the edge of littered spots. Habitat is mossy forest with undergrowth of bamboo.

Feb 6 1 in 411 traps. Taken in runway over the forest floor through a rather dense thicket of bamboo. Habitat mossy forest with bamboo undergrowth.

Feb 7 2 in 411 traps. Brought in by collector. Small species taken in open forest runway in the bamboo thicket, undergrowth of the mossy forest. No emb. Larger sp. taken at the edge of a log in runway. Habitat mossy forest with bamboo undergrowth.

Feb 8 1 in 411 traps. Brought in by ~~retro~~ collector.

Feb 14 2 km SW Bernard Camp Humberg R. Netherlands New Guinea 1200 m.

2 in 185 mouse traps. Brought in by collectors. Badly damaged by ants.

1 in 223 rat traps. Brought in by collectors.

Feb 15 Open forest runway. Stomach contained fruits and green vegetation. There were only 2 mucous glands present, no trace of the others. These two were enlarged and lactating. No sign of emb.

Feb 19 1 in 223 traps. Brought in by collector.

Feb 20 1 in 223 traps. Taken on forest slope with heavy undergrowth and litter.



Melomys

- Feb. 21 4 Km SW Bernhard Camp Idenburg P. Netherlands New Guinea 1200 m.  
2 ~~shot~~ in 223 net traps. Brought in by collectors.  
The small species had 4 mammary glands, the larger species only 2.
- Feb. 23 4 (2 sp.) in 221 traps. The rest of the smaller species taken in <sup>open</sup> runways over forest floor through area of scattered undergrowth. The other 3 specimens brought in by collectors.
- Feb. 24 1 in 17 stake traps. Brought in by collectors. Testes small.
- Feb. 28 1 in 228 net traps. Taken in forest runway. Habitat was that of heavy undergrowth and second story vegetation. The actual forest floor was quite open, and kept littered with occasional logs etc. Stomach contained remains of fruit.
- Mar 1 2 in 217 <sup>net</sup> traps + 17 stake traps. The larger species brought in by collectors. Stomach contained remains of fruit. 2 mammary glands only. The smaller species was taken in a very bushy thicket ~~where~~ a leafy slip which piled up with sand as fallen tree boulders etc. The head had been eaten through apparently by some other mammal.
- Mar 3 4: 3 in 219 net traps + 173 mouse traps. 1 specimen was dead by one of Bonds collecting logs. The two small specimens of the small species were taken in mouse traps 1 set at the base of a large forest tree and the other at the edge of a fallen log. Both in <sup>semi-protected</sup> runways ~~had~~ with undergrowth and litter acting as cover. The two are presumably different species. The 1 specimen of the larger species taken in net traps. Brought in by collector. No emb. Two mammary.
- Mar. 4 1 in 27 stake traps. Brought in by collectors. Fruit remains in stomach.
- Mar 5 5 in <sup>172</sup>~~272~~ mouse traps, 217 net traps, 27 stake traps. Brought in by collectors. The stomachs of the larger species contained fruit remains. The stomach of the smaller species <sup>(leaves + stems)</sup> green vegetation, as well as a fruit.



Mar. 7 #the SW Banked Camp Herburg River, Melburne New Guinea 8500m.

4 in 388 traps Brought in by collectors.

Both species contained remains of fruit in stomachs.

Mar. 8 1 in 388 traps. Brought in by natives.

Stomach contained fruit remains.

Mar. 9 3 in 388 traps + 141 snares. Brought in by collectors.

Mar. 10 1 in 388 traps. Brought in by collectors.

Mar. 12 2 in 388 traps. Brought in by collector. Abnormally female for large species 2 (1 pair) positive. For smaller sp. 4 (2 pair) positive.

Mar. 13 1 in 388 traps. Brought in by collectors. Stomach contained remains of fruit. Enlarged spots on intestines; no apparent emb. 4 mammals.

Mar. 14 1 in 388 traps. Brought in by collectors.

Mar. 15 1 in 442 snares. Brought in by collectors.

Stomach contained remains of fruit.

Mar. 16 1 in 209 net traps. Brought in by collector. Skin spoiled by ants.

Mar. 17 1 in 155 snare traps. Brought in by collectors.

Stomach contained remains of fruit. No emb. 4 mammals.

Mar. 18 2 in 364 traps. Brought in by collectors.

No emb. Stomach contained <sup>the evidence</sup> fruit remains.

Mar. 19 1 in 364 traps. Brought in by collectors.

2 emb. Stomach contained fruit remains.

Mar. 20 4 in 359 traps + 27 sticks + 643 snares. Brought in by collectors.

Mar. 21 1 in 670 snares. Brought in by collectors.

Mar. 22 1 in 27 stick traps.

Mar. 23 2: 1 in 359 traps; 1 caught in insect net.

The specimen taken in traps was brought in by collectors. Although the assistant of Dr. Foxgens caught an adult ♂ in insect net. According to him it was running along the edge of camp clearing. This evening I also saw one come out from beneath the dining room floor and run along the camp clearing at the rivers edge. The gait was a run and not a jumping as might be expected. However, it might have resorted to jumping had it been disturbed.



Melomys

- Mar. 24 4 Km SW Burnard Camp Idenburg R., Netherlands New Guinea 850 m.  
3 in 359 traps Brought in by collectors.
- Mar. 25 4 Km SW Burnard Camp Idenburg R., Netherlands New Guinea 850 m.  
3 in 357 traps. The small sp. taken at the edge of a rotting log in a littered area, with moderately dense undergrowth and second story and sparse scattered large forest trees. Area at the edge of the Agathis forest. The trap was placed in a runway at the edge of the rotting log. Large species in a runway through a undergrowth thicket. Habitat: moist hill slope with dense patches of undergrowth; moderately thick second story and scattered large trees. The medium sized sp. (which is new for the collection) was brought in by a collector. Habitat is the moist conditions with bushy vegetation and thick second growth <sup>along</sup> the banks of the stream close camp. Actually the trap line was set along upper bank of the river and the lower edge of the flood plain. Stomach contents of large species contained remains of fruit; of med. species fruit, green vegetation, and several ants; of small species fruit remains.
- Mar. 24 4 in 327 set traps + 832 snares. One of the small species was taken from the traps <sup>traps</sup> by me. Habitat is second growth forest close the flood plain where the undergrowth and litter is abundant. The other 3 individuals brought in by collector.  
No. emb. is 9.
- Mar. 30 1 in 207 set traps. Taken in Agathis forest with rather heavy undergrowth and leaf litter. Trap was set in runway.
- Mar. 31 4 in 332 traps, 27 steel traps, 931 snares - 3 brought in by collectors. " 7762 taken in runway through the undergrowth. The trap was set at upper edge of the river bank when it joins the flood plain. Rather heavy undergrowth and flood plain vegetation. Stomachs of the two prepared specimens contained fruit remains. The small species, in alcohol, ~~swallowed~~ had a perodoneus seed in mouth when



trayed. This particular trap was set near the fruit which had fallen with the hopes of catching such animals as fed upon these fruits. These fruits are eaten by fruit bats as well as birds.

- Apr. 1  
4 km. SW Bernard Camp, Denburg River, Netherlands New Guinea 850 m.  
1 in 27 stub traps. Brought in by collector.
- Apr. 2  
1 in 330 traps. Taken in small runway through undergrowth of the flood plain vegetation bordering the river bank.
- Apr. 3  
1 in 987 snares. Brought in by collector.
- Apr. 5  
1 in 203 net traps. " " "
- Apr. 4  
Apparently juvenile; later not relayed.  
4 in 295 traps + 1075 snares. Brought in by collector.
- Apr. 7  
4 in 295 traps + 1095 snares Brought in by collector.
- Apr. 9 Bernard Camp, Denburg R., Netherlands New Guinea 80 m. - 50 m.  
1 in 346 traps. Habitat - Rocky river wash, leaf litter, scattered undergrowth, heavy canopy of small trees.
- Apr. 10  
1 in 346 traps. ~~See~~ Taken in similar place as specimen of Apr. 9. except that less undergrowth; rather open forest floor except for rotting log litter.
- Apr. 20  
1 killed in "godown" (store room) at main camp.
- Apr. 22  
1 in 29 snare traps. Brought in by collector. Taken on lower <sup>mountain</sup> slopes above flood plain.
- Apr. 27  
1 in 253 net traps. Taken on narrow strip <sup>of</sup> land at the edge of the flood plain. The rising water has ~~been~~ covered most of the lowlands with water leaving only small areas exposed. The ground is very moist and will probably inundated in several days.
- Apr. 29  
1 in 234 net traps. Taken on forested lagoon edge. Trap set on moist forest floor. One subject to inundation.

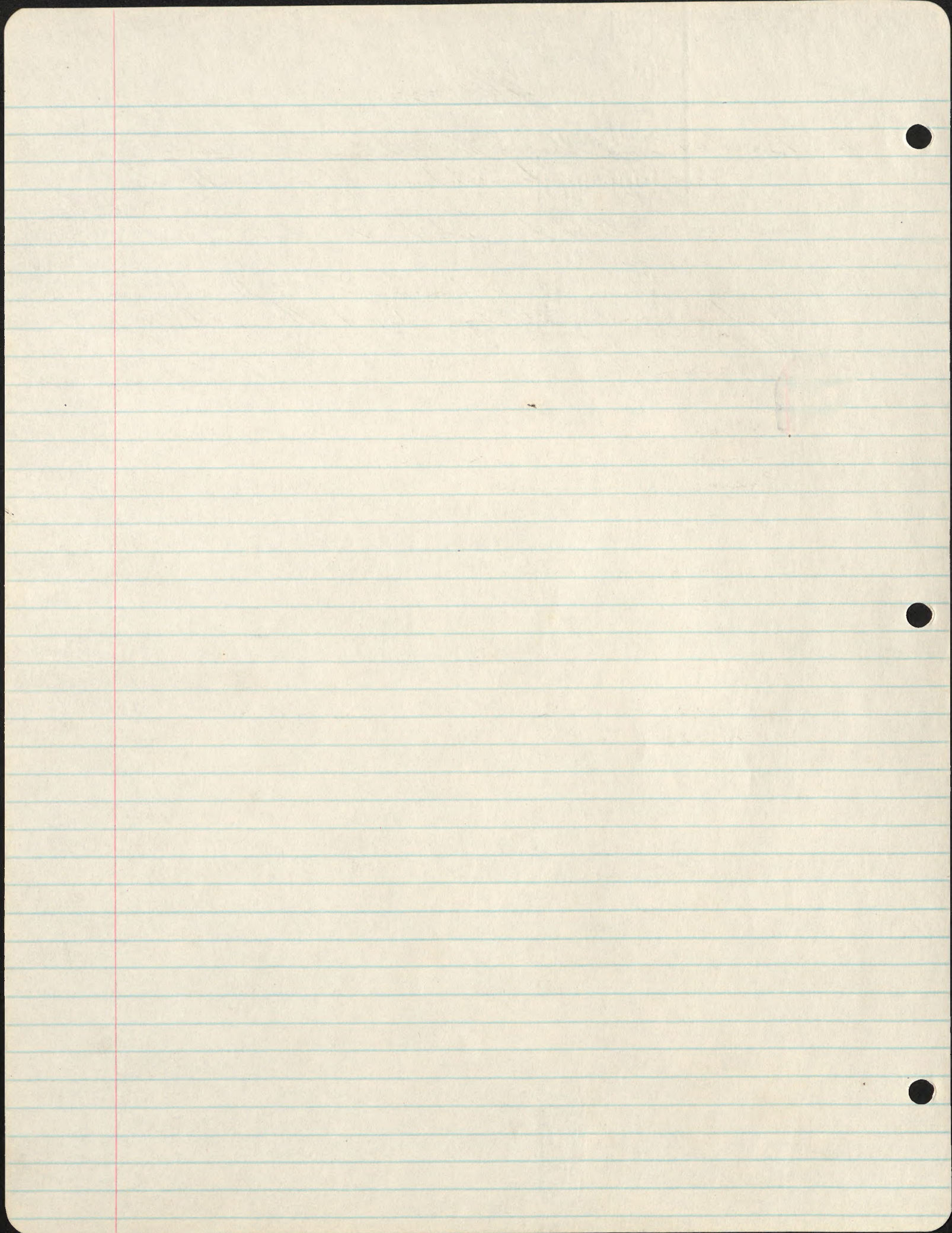


Melomys

Apr. 30 Burndard Camp, Darling River, New South Wales, New Guinea 50 m  
1 taken in godown (storehouse). It apparently had  
been there for some time for it had a crudely constructed  
nest in a black box which had been used  
for radio parts.

May 5 1 taken in 225 traps. Taken on the east side  
of the river along the inner edge of the cane  
thickets. The thicket is little affected by high water,  
small patches of grass, scattered trees, and brush clumps.







Wm B. Richardson  
1938  
1939

## Miniopterus

July 5 11 km. S.E. Hollandia, Netherlands New Guinea.

The cave from which these bats were taken is a large hole cut in the <sup>limestone</sup> sea cliff by the action of the waves. There were a number of caves along the cliff but only one, the largest seen, was visited. We entered the cave by glow and without artificial light. Little hundreds presumably of this species could be seen. They were clinging separately to the sheer wall face. Our entrance and shooting soon disturbed them and they either retreated to holes or cracks in the cliff or flew about the room. There were two other species of bats in the same cave. - Dobsonia and Myotis

July 8 1 1/2 km S Ajapo, Sentani Lake, Netherlands New Guinea.

Two of the species of bats were brought in today by one of my Papuan collectors from the vicinity of his camp, Ajapo, on Sentani Lake. According to his story they were taken from a cave. Besides the two sp. of bats there was Myotis sp.

July 14 Hollandia, Netherlands New Guinea.

The specimen prepared today was one of four brought in by a native from Sabatu.

Dec 17 Balin R. Netherlands New Guinea 1400 m.

1 shot yesterday evening. It was flying relatively early about the tops of the casuarina trees. Its flight was swift, with few beats and yet it was apparently feeding.

Jan 14 15 km S.W. Bernhard Camp, Denbury R. Netherlands New Guinea 1800 m.

1 taken by Althoff yesterday evening as it was flying about the insect lamps. Forewings have removed 4 or 5 sp. of insects from the individual. Bats have been seen several evenings flying within several yards of the lamp and on one occasion the bat



was seen capturing and eating, with the exception of the wings,  
a sphinx moth.

Jan 17

1 shot last evening by collecting boy. It was flying  
low (10-20 feet above the ground) over camp. It has a swift  
quick breaking flight. It rarely begins long at any one  
spot or darts back in its direction of flight but  
rather continues rapidly along in a more or less  
determined direction. Judging from the flight mode  
these bats are quite common here appearing early  
in the evening and continue flying as late as we can see.  
(6:35 to 7:10).  $\frac{2}{3}$  of the numbers <sup>of bats</sup> seen here must  
be of this species.

Feb 14 6 km SW Bernard Camp, Irian P., Netherlands New Guinea 1200 m.

1 shot yesterday evening. It was flying  
high  $\frac{3}{4}$  distance up tree. Apparently feeding in  
small open spaces among the lower foliage  
of the tree tops.

Feb 16 2 shot yesterday evening, one by Road and  
the other by Schuder. Only one contained  
sub. These bats were foraging about  
mid <sup>height</sup> height across a ~~the~~ narrow camp  
clearing. Moderately swift flight with few beats.

Mar. 4

2 shot by Road. Flying about 50 ft above  
the ground in a narrow section of the  
camp clearing.

Apr. 22 Bernard Camp, Irian P., Netherlands New Guinea 50 m.

1 shot yesterday evening by Road.



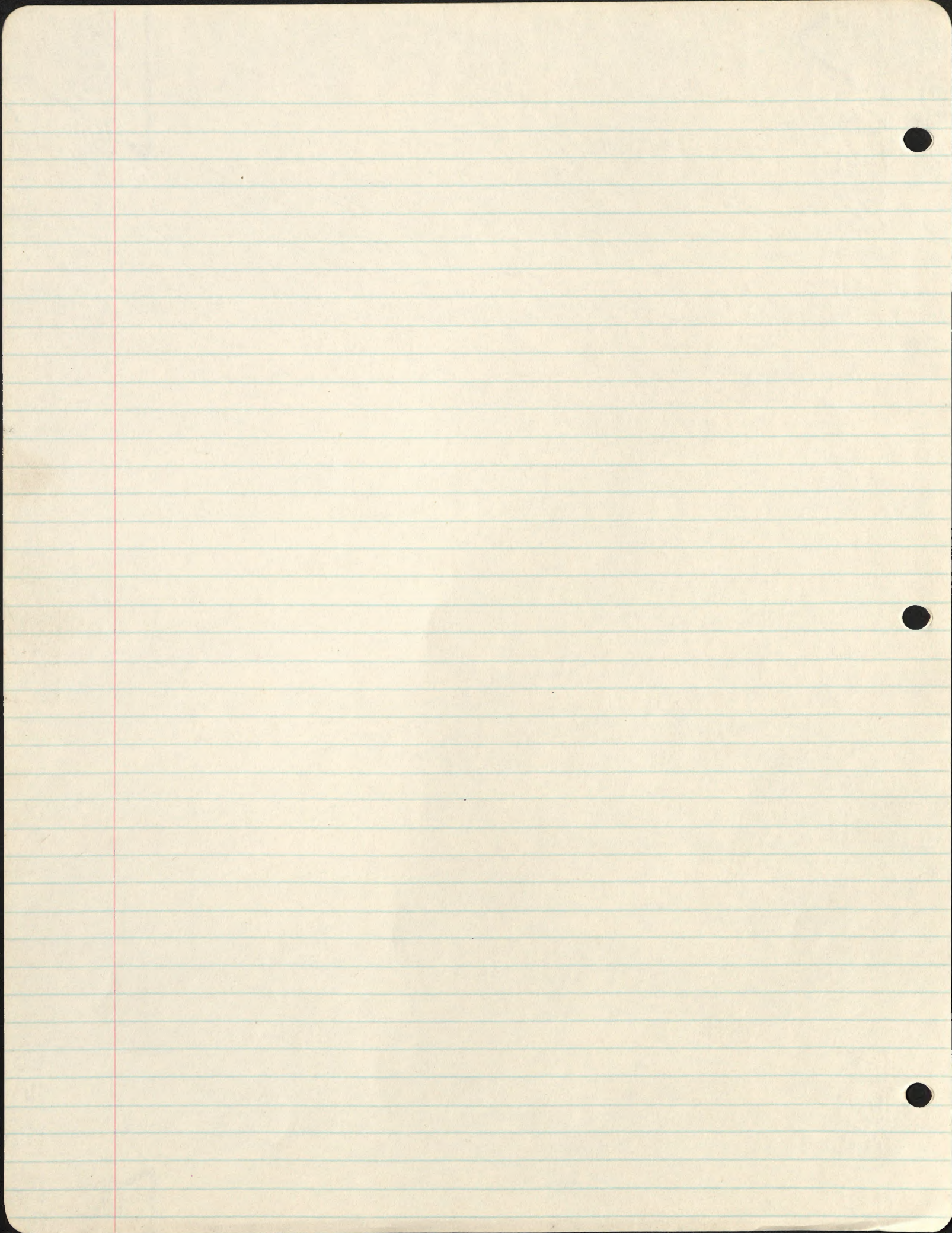
W. M. B. Richardson  
1938

Mos

June 14 Hollandia, Netherlands New Guinea.

One young animal was purchased <sup>(D.S.P.)</sup> from a boy who was helping the little beast to amuse his savage friends. About one of the hind feet of the animal was tied a piece of grass string and to the other end a piece of paper and as the beast scampered away the paper would flutter over the ground adding much to the pleasure of the young natives.







Wm. B. Richardson  
1938

## Myotis

July 5 11 km SE Hollandia, Netherlands New Guinea

Shot 1 of this genus in a long lime stone cave ~~at~~ in a sea cliff. This genus was the <sup>of 3 species</sup> ~~most~~ <sup>rearest</sup> seen in the cave. Although we could not identify them for certain the one obtained had a slower steeper wing beat and a lighter coloration than the common Miniopterus. Several (4) others were seen with a similar flight. Two other genera were seen in this cave Miniopterus and Dobsonia (see species notes of these forms)

July 8 1 1/2 km S Ajapa, Sentani Lake, Netherlands New Guinea

One of my Papuan collectors returned from his company, Ajapa, with a box of bats. This species was taken in quantity. There were 4 or 3 of two species of Miniopterus in the same box. According to his story they were taken in a cave.

July 11 Hollandia, Netherlands New Guinea

A local Papuan came in today with seven bats of this species. According to him they were taken from the native houses of Injora.

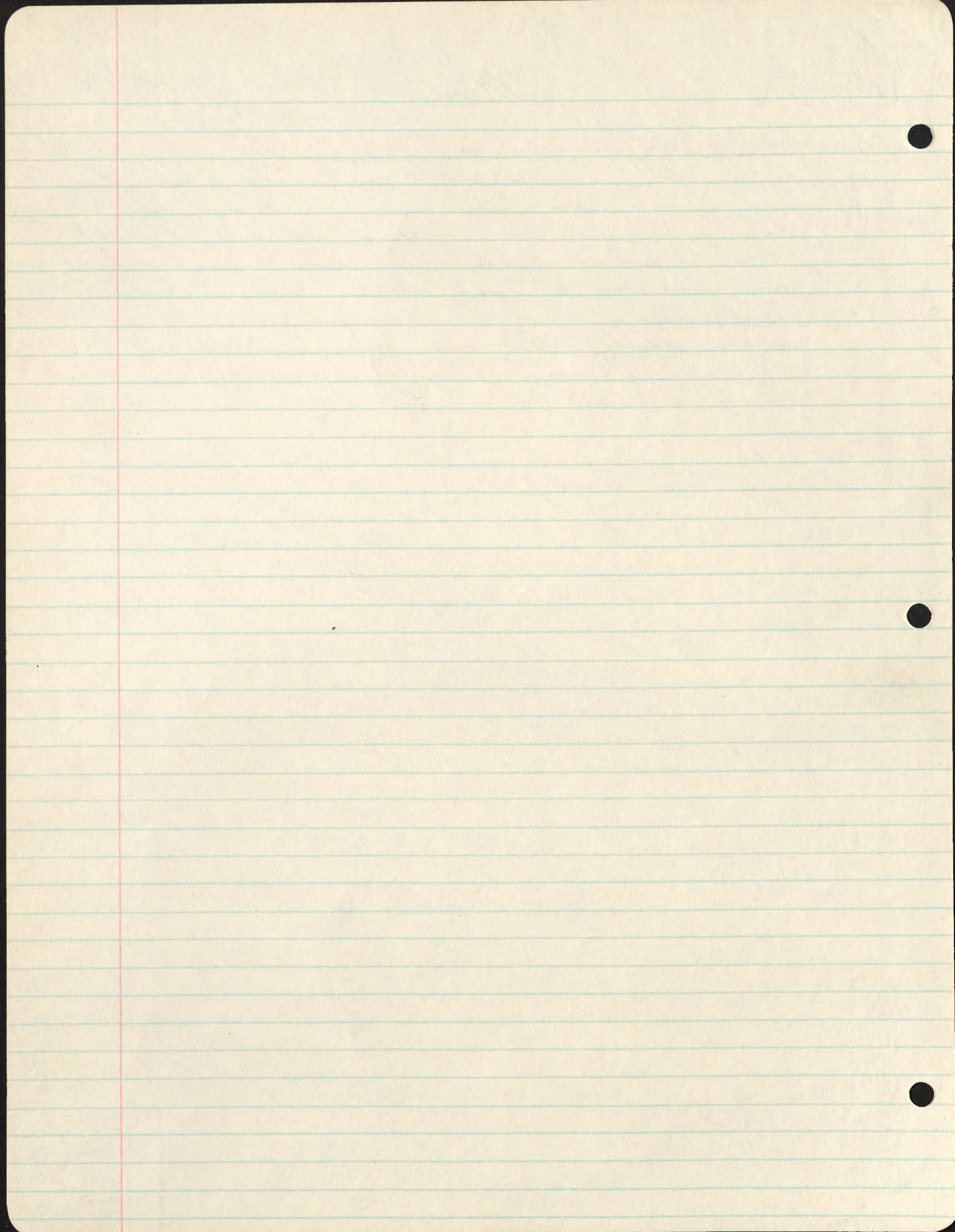
July 14-16 Hollandia, Netherlands New Guinea

These three specimens were brought in by local natives. Do not know the exact locality.

Oct 18 9 km NE Lake Halbu, Netherlands New Guinea 2800m.

One individual taken by one of Torrey's collecting boys. It was caught in an insect net while flying about the <sup>insect</sup> lamp.







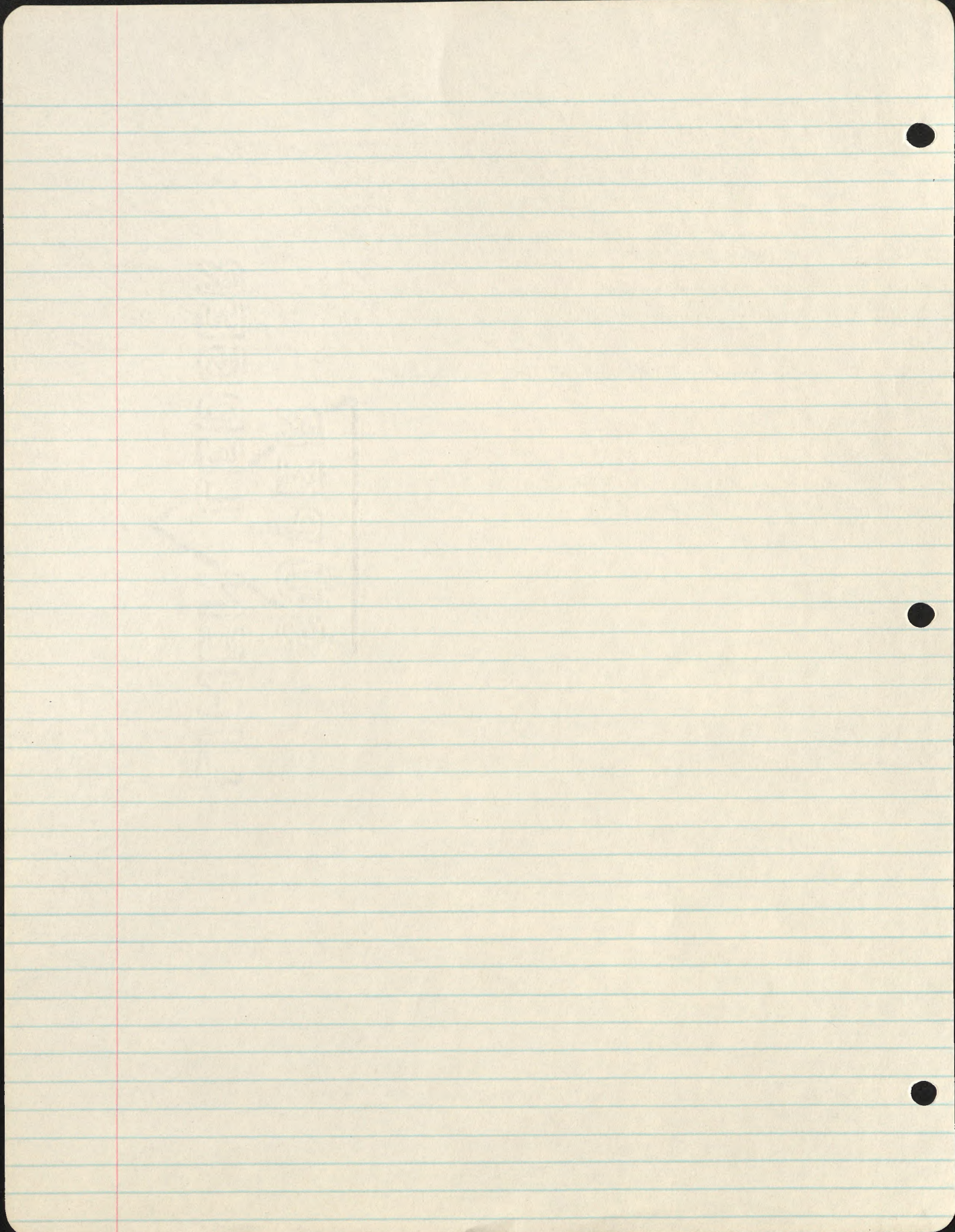
25713. Richardson  
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## Nyctimene

Mar. 22 4 km. SW Dumbud Camp Idenburg R. Netherlands New Guinea 850 m.

1 shot yesterday evening while out jacking.  
It was seen with spotlight flying about a fruiting  
Eugenia tree a common tree of the forest  
glades. Its flight was very slow and sometimes  
it seemingly poised while in flight. It  
was not seen while on the tree but  
only in flight about its upper fruiting branches.  
No emb. No food in stomach.







W. S. Richardson  
1938

## Peroryctes

Aug 18 Lake Habbema, Netherlands New Guinea, 3225 m.  
1 in 21 stick traps. This individual was taken in traps set 1 kilometre north north east of camp 50 yards inside a heavy mossy forest. The traps were set some 200 yds on a trail along the trail beneath a small rocky ledge. This trail went down a rather steep bank where it exhibited clear marks of some mammal. There was none on the <sup>moist</sup> ground except where the claws had scratched it bare. The forest here was thick with many low branches and a heavy low (~~at high~~) canopy which gave the appearance of a very long, but thick & rather thin forest for there were actually only a few large scattered trees. The branches and all the lower limbs as well as the ground was covered with moss and its associated plants.

Sept 12 2 km. N.E. Wilhelmina-top, Netherlands New Guinea, 3560 m.  
1 in 20 stick traps. The individual was taken in a small runway between two patches of sub-alpine forest on a hillside west of camp. The inter-space was vegetated with a few <sup>low</sup> bushy shrubs, scattered grasses and herbaceous plants. Small runways as such were taken in as quite common about the border of the forest. ~~at~~ in the edge. With this as it be found numerous runways, places where the moss and low growing vegetation has been clambered over as if the animal was in search for terrestrial insects. There were also holes in the ground 4-7 inches deep and 2 1/2"-4" diameter which are presumably made by this animal. There was nothing in the stomach.

Sept 15 2 km. N.E. Wilhelmina-top, Netherlands New Guinea, 3560 m.  
1 in 151 rat traps. Individual caught in traps



set in a runway through a dense grass thicket  
between (24) small patches of open brush and mossy  
forest.

Sept 16 2 km. NE Wilhelmina top, Netherlands New Guinea 3560 m.

1 in 20 stake traps. The specimen was brought  
in by collectors but they said it was taken  
in a trap set along the ridge NE of camp.  
To the far side is a patch of sub-alpine  
forest coming up to the divide and to  
the near side open grassland. It was in  
a trail through where the grassland meets  
the forest that the animal was caught.  
The ridge is about 3800 m. high. One  
mammary gland was much enlarged indicating  
that it has recently been suckling young.

Sept 21 2 km. E Mt. Wilhelmina, Netherlands New Guinea 3950 m?

1 in 104 traps. Specimen ~~xx~~ was taken  
upon or in a small saddle on the mountain  
slope south of camp. Here there was a heavy  
growth of brush grass (and other matter) forming a  
mat over the old lime stone tethers. Also there  
were occasional rocks protruding above the  
grass and scattered *Coprosma* bushes.  
*Remora gigas* (digings) are seen about the  
hill slopes where there is a heavy vegetation  
of grasses.

Sept 22 2 km. E Mt. Wilhelmina, Netherlands New Guinea 3850 m.

1 in 104 traps. The individual was  
brought in by collectors who said it was  
taken in stake traps set in a large runway  
through the lower end of a ~~large~~ tethers slope  
where they had accumulated large boulders  
which have through time been partly overgrown  
with large brush, moss and *Luzula* plants.



Peroryctes

- Sept 27 2 km E Mt. Wilhelmia, Netherlands New Guinea 3900 m  
1 in 104 traps. Brought in by collectors. Taken  
in region similar to that described in Sept 22 notes.
- Oct 14 9 km NE Lake Habbema, Netherlands New Guinea, 2800 m.  
1 in ~~104~~<sup>57</sup> traps. Taken in runway beneath a  
mass covered by litter of the mossy forest. The runways  
of the animal are quite common although up to  
late I have only taken one individual. This is  
the animal that the natives eat when dead-falls  
for.
- Oct 29 9 km NE Lake Habbema, Netherlands New Guinea 2800 m.  
1 brought in by natives. It was an old specimen  
which quite possibly was brought in from some  
distance probably below.
- Nov. 1 9 km NE Lake Habbema, Netherlands New Guinea 2800 m.  
1 brought in by natives. Probably says from  
below 2300 m ±.
- Nov 12 Bele R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
2 brought in by natives.
- Nov 13 Bele R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
1 brought in by natives.
- Nov 14 Bele R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
2 brought in by natives.
- Nov 15 Bele R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
4 brought in by natives. The larger of the ♀s  
had 1 punctured mammary gland.
- Nov 16 Bele R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
3 brought in by natives.
- Nov 17 Bele R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m  
1 brought in by natives



- Nov 18 Bele R. 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
5 brought in by natives.
- Nov 20 Bele R. 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
2 brought in by natives.
- Nov 21 Bele R. 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
2 brought in by natives.
- Nov 22 Bele R. 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
1 brought in by natives.
- Nov 23 Bele R. 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
1 brought in by natives.
- Nov 24 Bele R. 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
7: 6 brought in by natives. 1 in 206 rat  
traps. Individual taken in running ~~then~~ over the  
leafy <sup>thick</sup> surface of the open ~~savanna~~ forest.
- Nov 25 Bele R. 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
3 brought in by natives.
- Nov 26 Bele R. 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
3 brought in by natives.
- Nov 27 Bele R. 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
4 brought in by natives. Yesterday  
while trading traps to a native showed me  
what he said was a nest or rook of one  
of these animals. It consisted of a hole in  
<sup>in the earth</sup> <sup>45</sup> <sup>below</sup> <sup>to</sup> <sup>the</sup> <sup>base</sup> of a small tree. It went in for at  
least 3 ft and then I believe joined other well known  
burrows. The entrance was plugged with moss  
some six inches in length.
- Nov 28 Bele R. 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
3 brought in by natives.



# Peroryztes

Nov 29 Bah R. 18 km N Lake Hellenes, Netherlands New Guinea 2200m.  
2 brought in by natives.

Nov 30 Bah R. 18 km N Lake Hellenes, Netherlands New Guinea 2200m.  
4 brought in by natives. The parent of the nest opens persistently. It is a small pouch, just enough to contain the young with little room to spare. It is not the large sack like pouch of the Phalanger. If no young is present the pouch seems to contract until there is little remaining other than a small anterior flap, <sup>(5mm.)</sup> which leaves the entrance exposed.

Dec 2 Bah R. 18 km N Lake Hellenes, Netherlands New Guinea 2200m.  
1 brought in by natives.

Dec 5 Bah R. 18 km N Lake Hellenes, Netherlands New Guinea 2200m.  
4 brought in by natives.

Jan 11 15 km SW Benteng Camp, Haining P. Netherlands New Guinea 1800m.  
1 in 28 steel traps. Trap set in runway beneath a spreading nest system of several large trees. The large nests at the base which had at one time spread out over the earth surface were now undermined leaving many runs and runways the upper surface being covered with litter and supported by roots. There are frequent exits and entrances and it was at one of these that the animal was taken. The entrance enlarged but there was no sign of young.

Jan 14 1 in 28 steel traps. Brought in by collector. Taken in large <sup>nest hole</sup> ~~surface~~ runway in moss forest.

Jan 19 2 in 28 steel traps. Taken in runway beneath a fallen log. Moss forest. The juvenile <sup>placed in pouch and</sup> was not attached to the tit although the ♀ was alive. There were 4 tits only 1 of which was functional. The pouch has rather a long opening, that is large enough to easily extract the young. It opens <sup>persistently</sup> from a pouch which measured about 50 mm. in depth. When



these animals are caught without young there is no evidence of a pouch but only a slight dyspersion containing the tits and the modified hair.

Jan 21 15 km SW Berendse Camp Hartung R. Altlandschape Fluss Guinea 1800 m.

1 in 22.9 net traps. Brought in by collector. The pouch area is present measuring  $7 \times 5$  mm. The 6 tits at within this area are very small, little more raised on the skin. There is a slight tendency toward the formation of a pouch. The anterior edge of the pouch there is a small fold about  $\frac{1}{2}$  mm which extends backwards for about  $\frac{1}{2}$  the distance of the pouch area.

Jan 22 1 in 2.9 stub traps. Brought in by collector.

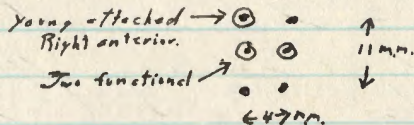
Jan 24 1 in 2.8 stub traps. Brought in by collector. The adult ♀ had in its pouch a juvenile. The most immature young of a marsupial that I have yet seen. The strange thing to me is that the pouch was large, very large for such a small beast. I had previously thought that the pouch of marsupials tended to enlarge <sup>or grow</sup> from the time of the birth of the young and at all times it was ~~not~~ <sup>at all times</sup> little more than large enough to hold the young. This however is apparently not the case with this marsupial for both the pouch and the opening there to were far larger than would be seemingly necessary for the young during its early stages of pouch development. Perhaps this large pouch + opening is to facilitate the young finding its way to the tip. The pouch <sup>oval in shape</sup> unstrained measured <sup>60 mm</sup> long ~~28~~ <sup>30</sup> x 40 mm wide. The posterior opening to the pouch measured unstrained  $25$  mm <sup>long</sup> x  $25$  mm broad. The distance between the vagina (closed) and the lip of the pouch measured 11 mm. The arrangement of the tits and this approximate distance from each other is shown in diagram to left. The young <sup>young attached</sup> was firmly attached to one of the 2 punctured tits. • • • • • - Functional but no young



Peromyscus

Jan 28 15 Km SW Bernhard Camp Idarburg R., Mitchell Co. New Guinea 1800 m.  
1 in 17 stick traps. Taken in runway beneath a log. The runway of these animals deep as much as possible under cover of log, roots, or litter. This beast was in the same traps as that one taken on Jan 26.

Jan 29 2 (1 juv.) in 17 stick traps. Taken in runway beneath fallen log. This female like the one taken on Jan 26 had a young in its pouch. Here however the young was slightly larger (caudrodorsal specimen). The opening of the pouch seems to be little more than a longitudinal slit rather than the oval opening as indicated on specimen of Jan 26. Length of this slit-like opening of pouch 27 mm. Distance of pouch from vagina 12 mm. Distance from vagina to slit to which young is attached 33 mm. Pouch measured 60 mm long by 43 mm broad. The following is a diagram of tits



It is of interest to note that the young in this case as in the one of Jan 26 was attached to the anterior right tit, and that the middle left tit was in each case functional. With this specimen the middle right tit also functional. These two unused functional tits however are smaller than the one to which the young is attached showing degeneration toward the non-functional ones made on the diagram as black dots.

Jan 30 1 in 17 stick traps. Taken in large runway through the open forest. It apparently a beast unlike the smaller sp. which inhabits the open less litter areas of the forest. The larger legs, larger hindgait, shorter ears, shorter tail, finer textured hair, the lack of dorsal or hip stripes are all external characters which separate from the smaller species.

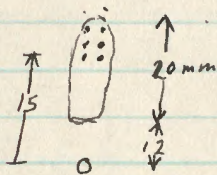
Feb 2 18 Km SW Bernhard Camp Idarburg R., Mitchell Co. New Guinea 2150 m.  
2 in 17 stick traps. Brought in by collectors who said they were taken in runway beneath fallen logs.



Feb 3 13 km SW Berland Camp, Idubung R., Middlelands New Guinea 2150 m.  
 1 in 17 stick traps. Taken in <sup>open</sup> runway  
 over the forest floor. Habitat was that of mossy  
 forest and bamboo. The latter apparently  
 attributable to the decrease in mossy conditions.  
 This species is apparently - thing of the  
 open forest (terrestrial) rather than a best  
 nesting cover of logs etc. as the dark striped  
 species found in this same area.

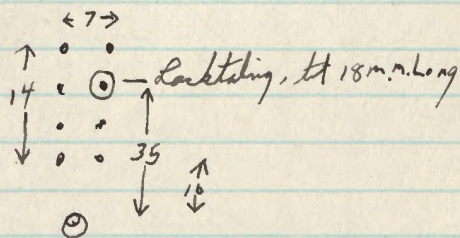
Feb 5 1 in 27 stick traps. Brought in by collector.  
 Habitat Mossy forest with bamboo undergrowth.

Feb 17 6 km SW Berland Camp Idubung River, Middlelands New Guinea 1200 m.  
 3 (1 juv.) 27 stick and 234 rat traps. - The  
 large ♀ with juveniles brought in by collector. He  
 said female alive in trap and a distance of  
 about 1 yd was the young still alive and moving  
 feebly. The smaller ♀ taken in rat trap  
 set in an open forest runway, that is there  
 was no cover such a log or lily but rather  
 it was a trail through the undergrowth  
 and rotan over the forest floor.  
 Following is diagram of the pouch.



#7498

The posterior pair of teats (8 in all) were  
 concealed by a 7 mm flap of skin extending  
 posteriorly. No sign of lactation or milk.



#7499

The total length of the pouch  
 was 168 mm long with  
 apparently room enough to  
 contain the young. Only 1 of  
 the 8 lactating. The  
 opening of the pouch, a medial  
 slit measured 25 mm but  
 could be stretched to 50 mm.



Peroryctes

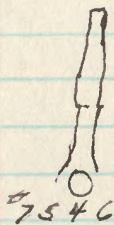
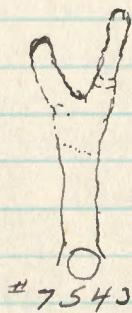
Feb. 21 6 km SW Bernhard Camp, Indrag R., Altkorland New Guinea, 1200 m.  
1 in 105 snaws. Brought in by collectors. Stomach contained the remains of insects and grubs, as well as what appeared to be ant eggs.

Feb. 25 2 in 134 - snaws - 1 brought in by collectors. The other #7543 I examined when in traps. Taken in snaw set along small runway over leaf floor through low undergrowth on a ridge top. Habitat being undergrowth cut open canopy of large forest trees.

Note. These 2 different species as far as I can determine inhabit small the same area, or small the same size and appearance. #7543 has a bipide penis measuring 30 mm. with the fork at 12 mm.

On the other hand #7546 has the normal penis that is single. (see drawings) measuring 23 mm. in length.

The stomach of #7543 was empty while that of 7546 contained the remains of material which appeared to be insects or other small invertebrate life.



Note Information Dated Feb 25 and under This bracket goes under heading of Phascogate

Mar. 1 1 in 17 steel traps. Brought in by collectors. Insects in stomach. Testes small apparently not an adult.

Mar. 2 1 in 182 snaws. Brought in by collector. Taken on ridge top about same level as camp. Notes on pouch etc. No young. Opening to pouch a broad slit 25 mm. in length. Posterior lip of pouch 15 mm from vagina. Posterior testis 30 mm. from vagina 6 mammae now lactating. They slightly enlarged (as diagram)  
 Length of <sup>slightly</sup> enlarged testis 6 mm and not enlarged in 2 mm. The pouch is 60 x 30 mm.



The stomach contained the remains of insects, annalids, and such organic material.

Mar. 4 6 km. SW Burnard Camp Idenburg R. Netherlands New Guinea 1200 m.

2 in 209 snares. Brought in by collecting boys. These two, 1 an adult ♀ and the other its young, were taken on ridges in open forest above camp level. According to the collector the adult was dead in the trap and the young waiting nearby. At approach of collector the young attempted escape and was shot. Pouch opening 40 x 30 mm. Posterior lip of pouch to vagina 15 mm. Lip of pouch to <sup>single</sup> enlarged mammae 30 mm. Posterior right tit + mammae only enlarged. Other 5 small. Length of enlarged tit 25 mm. Non-enlarged tit, vary in length from 1 to 3 mm. The pouch opening can be expanded to a circular opening with diameter 55 mm. Pouch, inside dimensions, 115 x 70 mm. It can be stretched to exceed these measurements. Stomach empty.

Mar. 5 1 in 27 stub traps. Brought in by collector.

Mar. 8 4 km. SW Burnard Camp Idenburg R. Netherlands New Guinea 850 m.

1 in 87 snares. - Brought in by collector. ♀ with juvenile. Pouch 35 mm. long. Posterior lip of pouch to vagina 15 mm. Of the 8 mammae the right anterior being the only functional one. Length of tit row is 12 mm. From posterior tit to lip of pouch 23 mm. Pouch measures 103 x 50 mm. Stomach contained remains of invertebrates.

Mar. 9 2 in 27 stubs + 141 snares. - One brought in by collector the other taken in <sup>forest</sup> trail through open undergrowth of secondary forest.

Mar. 9 6 km. SW Burnard Camp Idenburg R. Netherlands New Guinea 1200 m.

2 in 231 snares x 2. Brought in by collector. Said to have been taken in forest floor trails.







Mar. 22 # Km. SW Bumband Camp Idenburg R. Netherlands New Guinea 850 m.

<sup>(Juv.)</sup>  
2, 742 snow. Taken on low ridge above  
shed plane. Forest rather open with moderately  
thick undergrowth and leafy forest floor.

The adult ♀ # 7708 has in pouch a living  
young # 7709. Following are notes on the activities  
of this young. When not disturbed & the young  
remains relatively inactive in the dead mother  
pouch. The only movements seen are those of  
a regular ( $\frac{1}{2}$  sec) respiration. Very occasionally  
there is a movement in the shoulder region.

The least young is in a curled up position with  
its posterior toward head of mother and the young  
itself faces the pouch opening. When the  
longitudinal pouch opening is opened the young  
draws away apparently stimulating a negative  
reaction toward open pouch. This activity  
is a definite pushing away with the front and  
hind feet from the opening. The young  
young which has not been subject to  
open pouch for the past 5 min has worked  
its way to a cross wise position in the  
pouch so that head is under one of the  
lateral lips and wings under the other.

Now it is in a quiet resting position  
and in apparent darkness as far as eyes (exposed)  
are concerned. Mother turned on side leaving  
the pouch again. The young read reorients  
itself with head toward pouch opening and  
become quiet again. For the past 10 min remained  
quiet except for occasional squirming. Pouch  
is never opened by young during this squirming.  
Reopened pouch. Young pushing away from opening.  
Finally detached itself from tit during struggle. No  
effort made to regain tit nor utter noise.

Young removed from pouch. Definitely has a  
sense of equilibrium. Attempts are made to get  
on its feet and when this is accomplished after  
much effort it proceeds with a very sprawling  
sort of a walk. Spends a good deal of its time



Perognathus

on its side squirming and kicking the front feet ~~are~~ moving alternately and the hind feet ~~are~~ <sup>moving together</sup> ~~are~~ <sup>simultaneously</sup> one being slightly ahead of the other. When placed near the pouch it makes no effort towards entering but continues its aimless squirming. It has been out of the pouch now for about 10 min and its activities are lessening. Seem to be content to lie still with periodical squirms. Touch seems to stimulate it to reaction. It is now uttering very soft squeaks as it squirms about. Note should be made of the fact that when the dead mother was removed from the area the young was squirming outside of the pouch but it still retained hold of the tit. Measurements of pouch are as follows -

Vagina to posterior tip of pouch 10 mm  
Pouch opening 35 mm.  
Posterior tip of pouch to posterior tit 15  
Tit row 13

⊙ ⊙ The posterior vein is very small and  
⊙ ⊙ apparently <sup>permanently</sup> non functional. Only 1, the upper left,  
⊙ ⊙ to which young is attached in lactating.

Internal measurement of pouch 10 x 60.

Mar. 24 4 Km. SW Bundaberg Camp Meabury River, Netherlands New Guinea 850m.

1 in 812 snaws. Brought in by collector.

Mar. 28 1 in 845 snaws. Brought in by collector.

Mar. 30 1 in ~~845~~ <sup>27 shell eggs</sup> snaws. Brought in by collector.

There is a seemingly ochreous tinge to color of this nest. Perhaps it is a part of juvenile coloration.

Apr. 1 2 in 987 snaws. Brought in by collector

Stomachs contained insect remains and *Pandanus* fruit.

Apr. 2 2 (1 juv.) in 987 snaws. Both specimens in alcohol.

Brought in by collector.

Apr. 3 3 (1 juv.) in 987 snaws Brought in by collector

# 7790 measurements of pouch are.

Posterior tip of pouch to vagina 15 mm.

Length of pouch opening. 33



Position lip of pouch to posterior tip 25

Dimensions of pouch 65 x 45

Length of 1st row 12

Breadth of " " 6

Tits<sup>(4 pairs)</sup> are subequal in size varying in length  
from 2 to 7 mm.

Measurement of pouch area of specimen 7795 as follows —

Position lip of pouch to vagina 12

Position lip of pouch to posterior tip row. 23.

Length of pouch opening 33.

Dimensions of pouch 80 x 20

Length of 1st row 15.

Breadth of 1st row 6.

I believe after looking at many ♀s of this  
sp. that the posterior pair of tits are  
never functional. They are always smaller than others

• • Diagram of tits. ○ marks functional ones.

•  
•  
•

Apr. 15 Berndorf Camp Idenburg R. Netherlands New Guinea 75 m.

1 in 27 steel traps. Brought in by collector.

Taken on lower mountain slope above flood plain.

Stomach contained remains of insects.



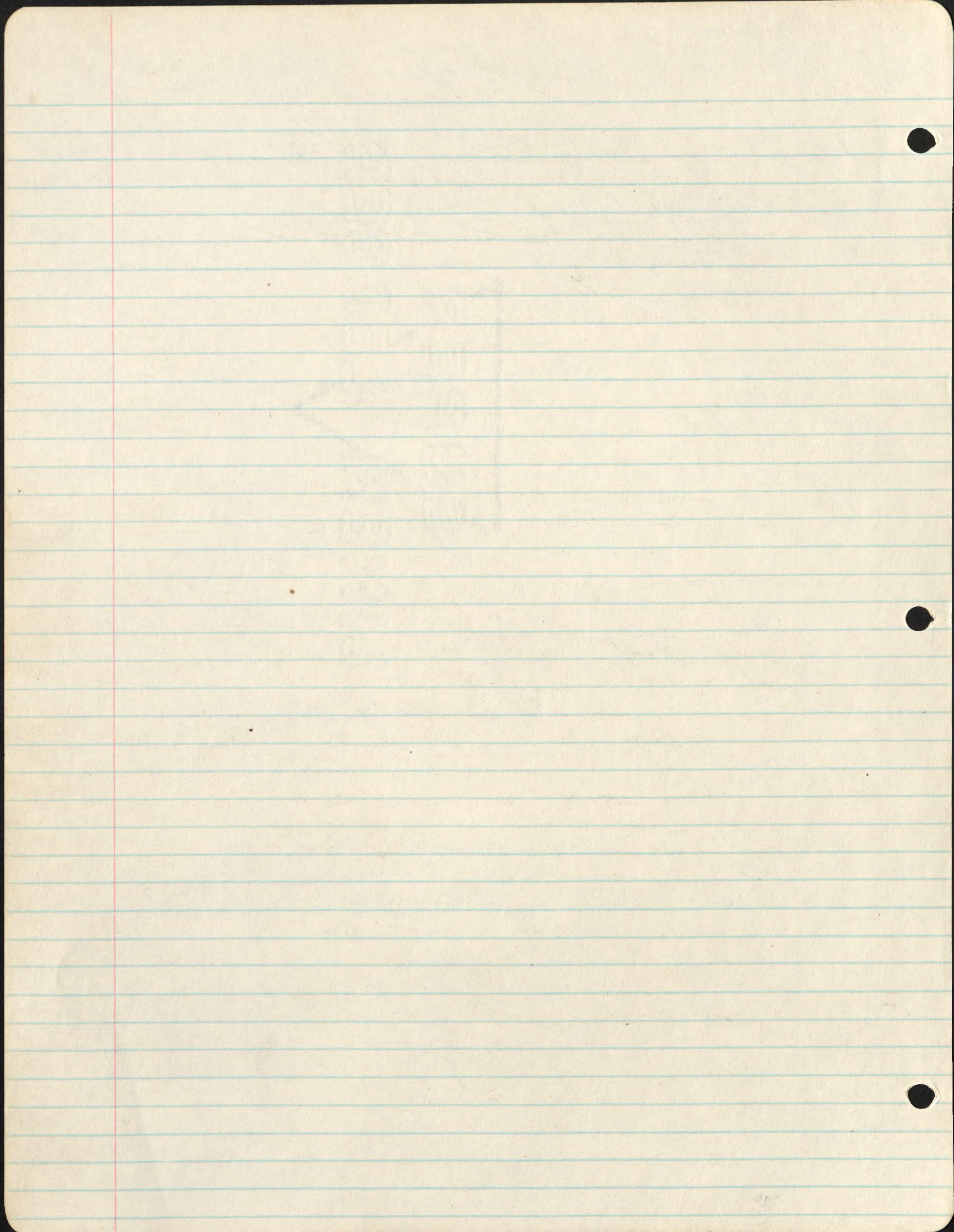
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Petaurus

July 14 4 km NE Dojo, Netherlands New Guinea 200m.

Day before yesterday an adult ♂ and  
two juveniles were brought to Hollandia  
by M. Chelis. The natives had caught  
~~it~~ <sup>them</sup> in the vicinity of his house  
near Sentani Lake.







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## Phalanger

May 21 Hollandia, Netherlands New Guinea

Today a young Papuan boy brought in a tame young 'cuscus'. His campers is Tolati but according to him he had caught it ~~at~~ on the main road across from the island of P. Hamadi in Humboldt Bay. The native name for the coast along where the ~~best~~ animal was captured is O or AW (as in saw). Roughly speaking it was taken about  $2\frac{1}{2}$  miles south of Hollandia. The phalanger was quite young, I would say about  $\frac{1}{2}$  grown judging from the capillary end of the tail. According to the boy it had been in his possession for one week. Even at this young age it exuded a liquid with a musty odor not unlike the weasels of North America. This odor was not noticed until the animal was being killed and within half an hour it had completely disappeared so far as my <sup>sense of</sup> smell was concerned. The urine came in a small stream with moderate pressure. The scats were dark green in color, size 50 mm. long and 5 mm. thick with tapering stringy ends.

June 1 Hollandia, Netherlands New Guinea

Two Phalangers were brought in for sale today, the price asked 5.50 \$, and the price paid 2.70. According to the two Papuans that brought them in for sale, they were captured near Striebiers, <sup>(sp.?)</sup> residents on the mainland south of Engros, Engros being located 6 kilometers south of Hollandia at the mouth of Jantepa Bay in Humboldt Bay. Tomorrow I will try to find out more about this locality. These two Phalangers, No 1<sup>#</sup> and No 2<sup>#</sup> are to be kept alive for study. Number 1<sup>#</sup> is apparently a sub adult with a pronounced black stripe down his back. Number 2<sup>#</sup> is a juvenile maculatus with light brown spots on a dirty white background. The food provided by the Papuans for the animals during transportation was the orange fruit



of the Papuanus. According to the Papuan  
 they would also eat papaya, pisang, and  
 the meat of coconuts. Their taste for  
 coconuts may account for their name, among  
 the white people (Mills) of Klapa rats. According  
 to the Papuan these two were taken in the  
 jungle, not on the mountains. The  
 local names for these are as follows:

	1 <sup>#</sup>	2 <sup>#</sup>
Malay	Kusu	Kusu
Tobadi	Em	Em
Engros	"	Em
Sentani	Wahe	Onen

The different sexes may change the name applied  
 to the animal however in the case (Tobadi) it  
 was not so ♂ Tanti and ♀ Moea. I  
 forgot to mention that these two beasts  
 were said to have been caught one day  
 ago (May 31). It is very difficult to find  
 out where and how these animals are caught.  
 It is difficult to explain myself understood  
 and conveyed with that is the fact that  
 the Papuan, or more interested in making  
 the sale than giving information to sciences.  
 I am under the impression that they will  
 tell you anything to suit the purchaser's  
 likes. Anything for the sale.

June 3

On the night of June 1, Thalopus #2  
 escaped by crawling through the rotten burlings  
 of its cage. I have good observations since  
 then on Sn #1. Dr. Rand and myself are of  
 the opinion that it is not well and its  
 actions cannot be considered normal regardless  
 of the cage. It is slow escaping. Its  
 movements are never more than a few  
 steps at a time. Its posture is  
 a semi coil upright on which the degree of  
 which varies with the activity. When walking  
 it tends to run coil but this is not pronounced



# Phalanger

leaps in the bush, when asleep it is coiled closely with the head held slightly to one side, when disturbed it remains motionless in a prone hunched position with its head upright but close to the ground. The tail is never held in regular but rather seems to be semi-coiled dorsally but allowed to be held in any position. The feet are always beneath the animal and close together often resting on or on a part of the tail. The food up to late has been one small *Conna* which was eaten <sup>in part</sup> during the day of the second of June and finished with the exception of about 2 teaspoons full during that night. The next day, today, it was given a rather large piece,  $1\frac{1}{2}$  cups of papaya including the seeds. It has fed on this intemperately all day a few bits at a time, about  $\frac{3}{4}$  of it still remains. I have been unable to tell whether the seeds or not have been eaten. The process of eating is a scripping off of the papaya with the lower incisors. So to this the head is pushed forward in a relatively slow rhythm with a fixed upward look.

June 4

The Phalanger (1<sup>#</sup>) died last night. It was probably the result of exposure and mal-treatment. Prepared the skin this morning  
No. - A 4001

June 7

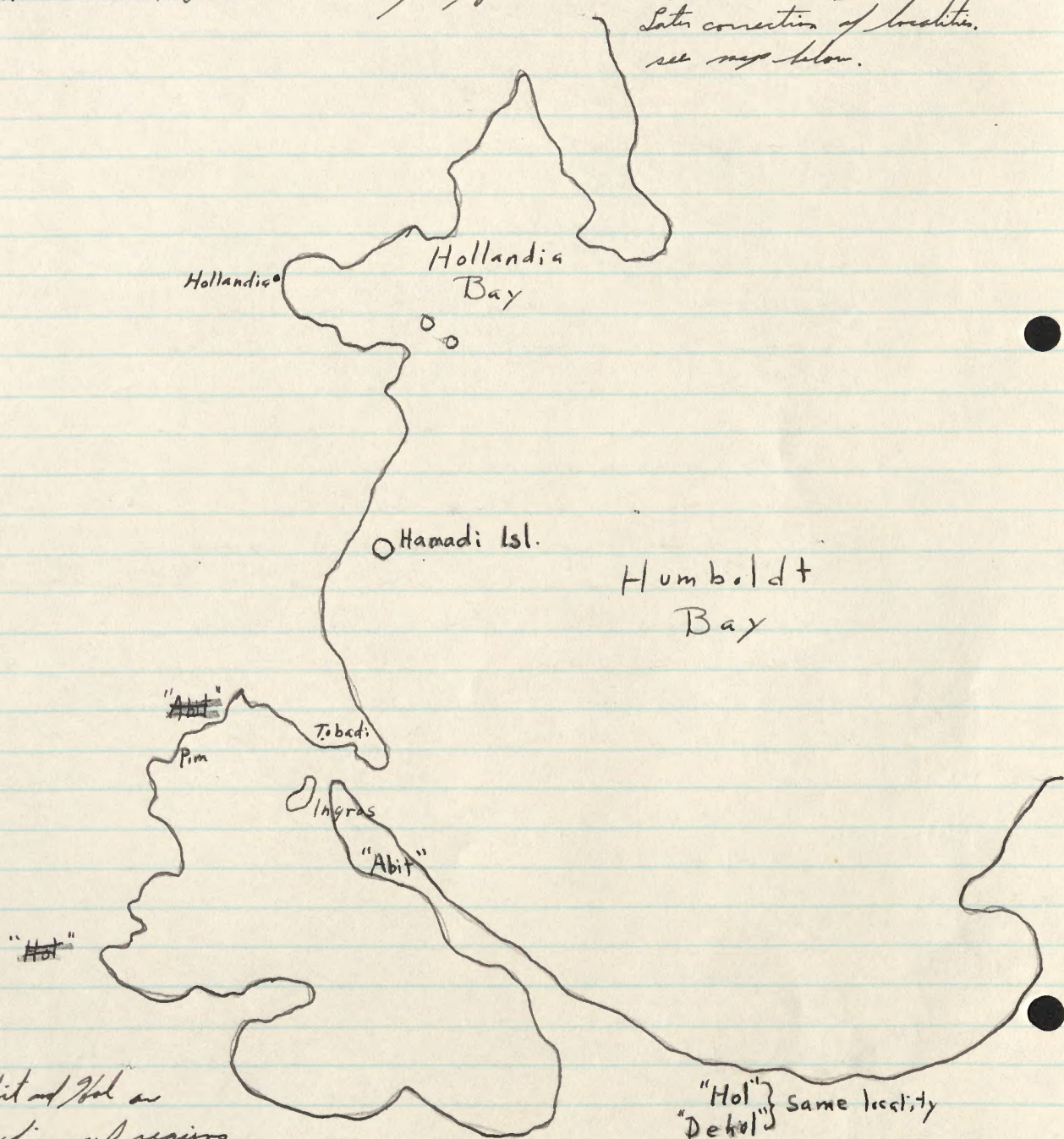
Hollandia, Netherlands New Guinea

Two crabs were brought in today by the natives. Price 2.50 guilders. The first (No 1<sup>#</sup>) is a [large] <sup>Juv</sup> ♂ partial albino, lacking the pink eyes. The other <sup>(No 2<sup>#</sup>)</sup> is a spotted crab in the colors tan, brown, and gray. It is tailless so I cut off the dried legs



end of the beast soon after I received it.  
 [No. 1<sup>st</sup> No. 2<sup>nd</sup> ~~was~~ according to the Pigeon  
 collectors caught yesterday in "Abit" Utang  
 about 1 1/2 Km west of Tobadi or 5 Km south  
 of Hollandia; the other 2<sup>nd</sup> was caught  
~~when young~~ and kept for 100 ± days by  
 the Pigeons. It was originally taken,  
 according to them in "Hol" Utang which  
 is located 4 Km south west of Tobadi or  
 8 Km. south south west of Hollandia, (See map). ]

Later correction of locality.  
 see map below.



Note: Abit and Hol are  
 names of jungle regions,  
 while Tobadi and Ingras are villages.

"Hol" } Same locality  
 "Dehol"



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## Chalanger

The two animals when put in the cage together were quite antagonistic and according to the cooks they were fighting and the younger or fatter smaller of the two with the bald tail was more aggressive. At present although evening they are quiet, docile beasts although they each keep to their respective corners. Their food today was a small papaya and 2 jumbos (sp.?) although they had eaten only about 1/4 of it. The dung of this beast is cylindrical measuring 5 mm x 20 mm. It has square ends as if held in the large intestine one against the other. They are emitted in rapid succession. While we were decrating and removing the cage a period of less than 30 sec. I counted the emission of 9 scats. They are dark greenish in color, composed of soft undigested vegetable material which have apparently been well macerated. Their micturition as observed is rather slow and weak.

June 8

Little time for observations. In climbing the tail is used only on the down hill grade, that is when the animal is climbing down a stick in the cage. Its tail then is used to support or break the fall by rapping around the limb above. In walking along a small limb the hind feet <sup>function</sup> ~~are~~ held opposite each other so as to give a firm grasp on the branch. The opposable toe is not used, apparently, as much as one would think; they seem to depend on the long sharp claws rather than the toe for clinging to the wire screen and walking along the branch in the cage.

June 9

Hollandia, Netherlands New Guinea

This fore noon I purchased (2.50) an



adult *Phalanger* with its 1 young. It is housed at present in the same cage with the other two. [Young #4010] [Adult 4115]

The food of these beasts up to late has included Bananas, coconuts (young & mature), Pandanus, tomatoes, geroko, jumbo. The tomatoes are not cared for. I have seen only one animal pick one up and bite into it. Mature coconut meat is also seen eaten only in moderation today when there was no other food in the cage. Bananas are relished. The ripening seems to be preferred, although the entire fruit is consumed. Young coconuts are eaten meat, inner shell and some of the inner pith. Geroko are also a very acceptable food for these beasts.

The adult ♀ is in color a light brown or dark tan in color with the upper surface being of a dirtier color than the rest of the body. The color of the young is a grizzled, <sup>dark</sup> gray all over. On side of the fur on one side of the upper abdomen is worn off due possibly to its caged conditions.

The locality from where they come according to the <sup>prisoner</sup> collector is from Strong (Forest) "Dehol." It was from this same forest that one of the previous animals was taken. (See map on previous page (22))

June 11 Hollandia, New Guinea

Notes on captive (4) *Phalanger*. - In addition to the food as listed on June 7. The Cuscus have eaten portions of a melon which is some what like our water melon but smaller and with greenish, white and light pink flesh. The seeds are apparently rejected. They have also eaten parts of a long bean like vegetable. Bananas still seem to be the preferred food. One of the smaller animals (the partial albino) according to an Malay cook ate two this afternoon. The activities of the mother and



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## Phalanger

young are very interesting. They seem to have a real motherly attitude towards the young, constantly eyeing its (young's) activities and reacting accordingly. When moving care is taken not to tread or squish the young and to give it advantages of the pouch or itself for security. When in motion (the adult) the young often clings to the back, or sides of the body. At times the young is carried in the pouch or ~~is~~ rather partially in, usually the head and fore shoulders. The other evening I saw it completely in the pouch with the exception of the left hind leg. This evening while observing the mother spent ten to fifteen minutes licking or grooming the young with an occasional lick for itself! Most of the young's body was gone over by its mother today, the young all the while paying little or no attention to the adult's efforts.

June 14 Hollandia, Netherlands New Guinea.

This evening I purchased another quinea which judging from size is a sub adult. The purchase price was .90¢, the price asked was 1.50 guilden. I hope that the reduction in price will not discourage their collecting. According to the natives it was collected recently in "Along (part), Soko Yambi." [Near Soko (sp.?)]

June 15 Hollandia, Netherlands New Guinea.

This morning I found the young (purchased June 9) dead in the cage. It had been less active during the past few days and had a very thin appearance so I was not surprised by its death. No 4010. The other two half grown young, the albino and red-tailed animals, have taken the place of the young. I have seen them both suckling the adult female and apparently sli. etc. then do as they please, even mothering



then much the same as she did her own young

June 16 Hollandia, New Guinea.

The Chalanger brought in on June 14, 1938, by natives, died last night as the result of a severe wound in the shoulder received during its capture. (P4012)

June 18 Hollandia Netherlands New Guinea

This morning I purchased (2.00) an adult ♂ Chalanger. This afternoon it was turned loose in the cage containing the adult ♀ and the other two sub-adults. When first liberated, the male explored the cage as if looking for an escape. His exploration took about two hours, after which time he has been persistent in attempting copulation with the female. During the attempts at copulation the male approaches from the rear over the female clinging to the fur on <sup>backing and</sup> about the mid waist. With the hind feet it attempts to turn the female on its side. During this process the ♂ licks the female and several times he ~~is~~ <sup>is</sup> nips ~~in~~ in the back.

At the present time 4:05 he is crouched in front of the female, who is sitting up, licking her pouch and probably her genitalia although the latter cannot be seen. The licking has been going on for the past 20 minutes. 4:07 The two animals are coiled up side by side in complete repose, the only difference from their usual day time sleeping posture is that their eyes are open. This posture is an upright coil sitting on their tail and with the head on the same. Their nose is held within an inch or less of the floor and with a tendency for them to hold it in toward their belly. During the day they remain in this posture for long periods of time.

Observations on climbing - The tail is apparently used preferably only when it is going down or when it is bridging a short gap. The tail has its greatest function on the down hill grade as



## Phalanger

when descending from the bar in its cage down the center upright. In this case the tail is grasped prehensily until the four (4) feet have reached the floor then the hold with the tail is released. When ascending the sides of the cage on the upright pole within the tail is ~~held~~ used as sort of a brace, that is its functions in much the same way that the tail of a wood pecker does. It is course to assume a firm grip (not coiled). In pushing outwards, that is away from the object climbed it allows the claws to step held, gives a secure grip (with claw), and keeps the body away from the object climbed. The tail during the upward climb is not coiled but rather is extended behind. When the animal is sitting or walking along the upright horizontal bar the tail is coiled about two complete turns so that the furled portion reaches the dorsal part of the coil. When walking on the floor the tail is either held up or behind in a semi coiled position or coiled up under the belly so as to protect the genitalia. The feet - The front feet has five claws the first two of which are used especially to the other three. This is quite apparent when the animal is climbing either up or down. When going up the animal depends upon the 3, 4, and 5 principally and the other two functioning prehensily when possible. When going down "till" the 1st and 2nd are used to hold the animal back and when possible they are used prehensily against the other three. The hind feet has four clawed digits and an operable thumb. This thumb is used only prehensily when crawling along a surface which is graspable, most of the time however it is functionless, the animal depending upon the long strong claws to grasp cater on to the rough surface upon which it is crawling. When crawling up the wire screen



on the cage the animal does not depend upon the thumb but rather upon the claws. The thumb can be removed from its anchorage, if it has one, without disturbing the animal. However when when the claw of the hind foot is removed from its hold on the <sup>wire</sup> screen it either seeks a new locality to fix the foot or else intensifies the grasp in the same locality or rather spot.

June 19 Hollandia, Netherlands New Guinea

Further observations on the caged animals -  
Late yesterday evening the sub-adult albino male spent about  $1\frac{1}{2}$  hours in the process of preening. The most interesting part of which was the use of 2nd and 3 digits of the hind foot, which are used, for combing its feet. The two claws of the second digit were rapidly run through the fur in short strokes in much the same manner as a dog scratches flus. The challenge however in more rapid being able to reach most parts of the body with one or other of its feet. These spots that it cannot reach are excusable to the front claw which are used in the manner of a rake with short jerks. A thing that is constant and apparent is the licking of the claws every two to five seconds of preening. This is apparently to remove hair from the claws and is done in the same periodicity with both front and hind feet. On the hind feet the claws of the second digit receive most of the licking while in the <sup>front</sup> feet all claws receive equal attention.

June 20 Hollandia, Netherlands New Guinea

Hardly observed the two adult caged animals attempting copulation this afternoon. Two to three minutes were spent on observation during which there was no contact was made.



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## Phalanger

June 21 Hollandia, Netherlands New Guinea.

One partially prepared skin was bought in today by a Sobate Papuan. It was purchased for 1.00 guilder. #4050.

Additional notes on caged animals - The adult female was seen on two different occasions to groom by combing its fur with the two claws on the fused digit. After an interval of 4 or 5 seconds the claws are locked and the animal resumes grooming. It was done in the same manner as previously observed grooming habits of the young & albino. The adult made a rather weak attempt at grooming population but failed. The female does not seem to be in a receptive mood.

June 23 Hollandia, Netherlands New Guinea.

Purchased (2.50 guilder) an adult ♀ and young from a Sobate Papuan. According to him he had taken it in the forest "Along Sobat" south of Sobate. The thing that impressed me was that the young was firmly attached to the tit of the female. A pull of 5 lbs ± did not even dislodge it. Only 1 of the 4 mammary glands was functional and this the one that the young was attached to. #4051 adult ♀  
4052 juvenile of the adult.

June 24 Hollandia, Netherlands New Guinea.

Purchased another adult ♀ and young for the standard price of 2.50 guilder. It was taken by natives from "Sko" in utery "Tojo mo ko" along on the hill west of "Cuyu batu". They had shot the beast with an arrow. #4081; juv. #4082.

July 4 Hollandia, Netherlands New Guinea.

Yesterday morning purchased another adult ♂ for 2.50. It was taken by a Sobate boy from the jungle near U'ave (Innan) Bay. #4113. One of the caged animals, adult ♀, was skinned. It had been sickly for the past week and today it was completely



off its feet so I thought best that it be prepared as a specimen. This ♀ was brought in to me on June 9 by natives. (See previous notes)

July 6 ~~4 km. NE Dojo, Netherlands New Guinea~~

An adult male of a species new to me was sent in by Mr. Ebeli. According to the note accompanying the animal it was taken on the Cyclops Mts., 600 M. The hill coast boy that brought it in said it was taken near "Doyo". I shall attempt to find out more about the exact locality of capture. It is a strong looking beast with short heavy set hind limbs, long body, and thick heavy shoulders and neck. It was somewhat cat-like in appearance.

July 9 ~~Hollandia, Netherlands New Guinea.~~

Subadult ♀ was sent this morning by one of Rando's Dyak collectors. According to the Dyak's gestures it was taken west of Hollandia (2-2 km) in the jungle (high rain forest). The young in its pouch is preserved.

July 13 ~~Hollandia, Netherlands New Guinea.~~

A subadult was brought in last evening by a hill Dyak boy. It was still squealing on the end of an arrow so I judge from that that it was taken in the neighboring vicinity.

July 13 ~~Hollandia, Netherlands New Guinea~~ ~~4 km. NE Dojo, New Guinea~~

The brown gray *Phalanger* brought in July 7 from Mr. Ebeli died last night. It was taken near Dojo, Section Lakon in the Cyclops area.

July 14 ~~Hollandia, Netherlands New Guinea~~

Prepared one specimen that was taken last evening by local natives. The animal was



# Chalonyx

was captured while crossing the road south of the Chinese store here in town.

Two live specimens were brought from Ajapa today by Santani Papuan.

July 15 Hollandia, Netherlands New Guinea.

The two cocoons prepared today have been in captivity for a short time. #4391 ♀ was brought in by a native from Ajapa, Santani Lake, the other was taken by a local Papuan from Isobati (vicinity of).

July 16 Hollandia, Netherlands New Guinea.

Oct 25 9 am. NE Lake Habbema, Netherlands New Guinea 2800 m.

1 individual brought in by a native for which I paid 2 shells. This was a mark on its feet which appeared to be made by a trap but there was no certain evidence of this. Later however the collectors brought in the ~~the~~ traps, which had undoubtedly taken the beast. The pouch was very small which I assume to be an indication of a sub adult beast. The dung which is seen uncommonly here was at Habbema quite common. At least the same type appeared at in Ajapa <sup>at Ajapa the dung appears below</sup> lower elevated routes. Few no dung heaps have been found there or scattered pieces along their elevated routes here. These routes consist usually of incised or horizontal logs from 3 to 20 ft. above the ground and varying in diameter from 2" to 2'. Usually the log is moss covered ~~and~~ over which is a fairly well defined track.

Oct 30 9 am. NE Lake Habbema, Netherlands New Guinea 2800 m.

1 brought in by natives. It had apparently <sup>been</sup> carried for some distance or else <sup>remained</sup> ~~was~~ in traps for time before



being discovered. The natives apparently do not find their traps regularly and at the same time have them set.

Nov 16 Bela R., 18 km N Lake Habbema, Netherlands New Guinea, 2200 m.  
1 brought in by natives.

Nov 17 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
1 brought in by natives

Nov 18 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
1 brought in by natives.

Nov 19 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
2 brought in by natives.

Nov 20 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
1 brought in by natives.

Nov 22 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
4 brought in by natives. There is obscure oil patch between front legs which discolors the lower parts of the white hair.

Nov 23 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
2 brought in by natives. Neither of these adults ♂♂ had as well defined oil patch as the ad ♂ Pseudochinus.

Nov 24 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m  
1 brought in by natives.

Nov 25 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
2 brought in by natives

Nov 27 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m  
4 brought in by natives.

Nov 28 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m  
2 brought in by natives



W. B. Richardson  
1938  
1939

8

## Palanget

- Nov 29 Beh R. 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
1 brought in by natives.
- Dec 1 Beh R. 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
2 brought in by natives.
- Dec 2 Beh R. 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
1 brought in by natives.
- Dec 3 Beh R. 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
2 brought in by natives.
- Dec 4 Beh R. 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
3 brought in by natives.
- Jan 11 15 km S.W. Bernhard Camp Idenburg R., Netherlands New Guinea 1800 m.  
1 in 29 sticky traps. Brought in by collector who said it was taken at <sup>in a trap at the</sup> base of a large tree (in the mangrove forest). It is possible that the animal was crossing from one tree to another by the path of least resistance a trail made by other mammals. Stomach contained remains of fruit and a small quantity of tender leaves.
- Feb. 21 6 km S.W. Bernhard Camp Idenburg River, Netherlands New Guinea 1200 m.  
2 shot last night just outside of camp. The collecting boy heard the noise investigated and shot one. I sent him out to see if another one was about and the second one seen. It ran along the ground a short distance and then up a series of several trees to a large mossy limb of one of the larger trees. After a difficult time of shining its eyes it was finally shot down. Stomach contained in each case fruit and leaves of ~~unknown~~ plants. There was probably 3 <sup>parts</sup> ~~parts~~ <sup>the</sup> quantity of leaf remains in the stomach and 1 ~~part~~ <sup>part</sup> fruit remains. According to the boys report this animal climbs very rapidly.
- Mar 9 1 Taken in 231 snare. Brought in by collectors.



Said to have been taken on trap set on  
log crossing stream. Dangerous? at parts  
about head.

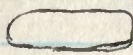
Mar. 10 4 Km SW Berlad Camp Idenburg R. Netherlands New Guinea 850 m.

1 shot yesterday evening. It was seen  
about 9:30 crawling about in an abundantly  
fruiting Eugenia and ~~the~~ shot. This particular  
species is a common <sup>second story</sup> tree of the flood  
plane. The fruit are numerous on the trees  
varying in size from 1 to 2 inches through, irregular  
globular, ~~fruit~~. When first seen the animal  
was crawling rapidly through the tree.  
A shot brought it to the ground where it  
began running along a small forest trail.  
It was pursued by my Dyak and caught as  
it attempted climbing a small sapling. The  
molt is perhaps the most interesting part of  
the hunt. The pelt show both the light and  
dark gray individuals which I have previously  
taken.

Mar. 17 Berlad Camp Idenburg R. Netherlands New Guinea 60 m.

1 sent to open camp by van Arden. He reports  
it as taken by ~~soldiers~~ natives. No measurements.

Mar. 19 4 Km SW Berlad Camp Idenburg R. Netherlands New Guinea 850 m.

1 in 598 skins. - Brought in by collector.  
Full stomach, remains of fruit only. Dung 30 x 9   
uniform in size, within 4 mm length and 1 mm thick.  
Apparently deposited singly. ~~It~~

Mar. 20. Today saw the snare in which the beast was  
taken; a forest floor runway through the dense  
second growths of the flood plain.

Mar. 23

2: 1 shot yesterday evening by my collecting boy.  
the other in 769 skins. Both taken above the  
flood plane in open forest with a moderately  
thick second story. The one shot was seen  
in a fruit tree. Stomachs of both contained  
fruit remains and a small amount of green material.



# Phalanger

Mar. 24 4 Km SW Bernhard Camp Idenburg R. Netherlands New Guinea 850 m.

1 in 812 snare. - Brought in by collector.

Pouch opening and 1 mammary gland functional appearing to have been suckling young.

Pouch opening is 70 mm long and 20 mm wide

Between horns of pouch opening 20 mm.

Regions at anterior portion of pouch (horns of opening) 145

Functional slit at anterior pouch 70 mm.

Dimensions of pouch 100 x 100 mm.

4 Mammas

Breadth of tit row 35 mm.

Length of tit row 7 mm

Pouch lined with soft, thin, hair mesest brown in color. Pouch hair slightly thicker about lips; thickest between horns and on belly part of pouch (includa tit).

Mar. 27

1 in 832 snare. Brought in by collector.

Stomach contained remains of fruit. From size of teeth I would judge this is being a sub-adult. Interesting molt.

Apr. 1

2 (N.W.) Shot last evening. It was seen moving

in a thicket some 20 ft above the ground. The thicket was on at the rather near the edge of the river in flood plain vegetation. No fruits were seen in the trees in which this nest was seen. On first shot the young fell to the ground. It was apparently being carried on the mother's back. The mother was taken with following shot. Following list of pouch was of adult ♀.

Pouch opening 70 x 35 mm



Posterior lip of pouch to vagina 100 mm.

Point between anterior horns of pouch to functional slit 100 mm.

Size of pouch 125<sup>long</sup> x 145 mm broad.

Pouch opening can be stretched to 131 mm.

The pouch itself can be stretched so as to give the young the size of the juvenile angeli room.

I believe that there would be room for 2 such young



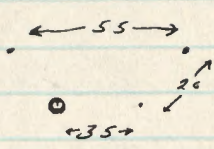


Diagram of tibia. Tib on marked  
 Ⓞ is functional and measures in  
 length 55.35 mm. Tib non  
 functioning tibia measures 5 mm.

The activities of the young - Clinging to every  
 stretch on which it could grasp with little  
 sense of equilibrium. Unable to walk, effort and  
 many falls. Tail and feet were used in  
 maintaining position on branch.  
 Stomach contains remains of fruit and green vegetation.

Apr. 15 Bertrand Camp, Idenburg P. Netherlands New Guinea 75-50 m.

1 killed by my Dyaks while they were at  
 setting traps. It was on the lower mountain slope  
 above the flood plain. According to their  
 story it was running on the ground and  
 on being pursued it climbed a small tree to  
 some 3 or 4 feet above the ground where it  
 was struck with a stick and killed. Stomach  
 contained remains of fruit.

Apr. 16 3 sent over from main by Rand. They  
 were shot by him yesterday evening.

Apr. 22 1 shot yesterday by Rand collecting boys.

Apr. 28 3 (1 juv) shot. The small white ♀ shot  
 by soldiers in forest edge of lagoon. The  
 ad. ♀ with juv. were taken in tree at  
 edge of inner lagoon in bend of main lagoon.  
 The animal was shyly active when seen at  
 clinging to the vine tangled trunk of a tree  
 some 20 ft above the ground. It was  
 about noon time when seen. Overcast day.

Apr. 29 1 caught in 762 snare - Brought in  
 by collector. Taken on upper flood plain on lower  
 mountain slope (?).

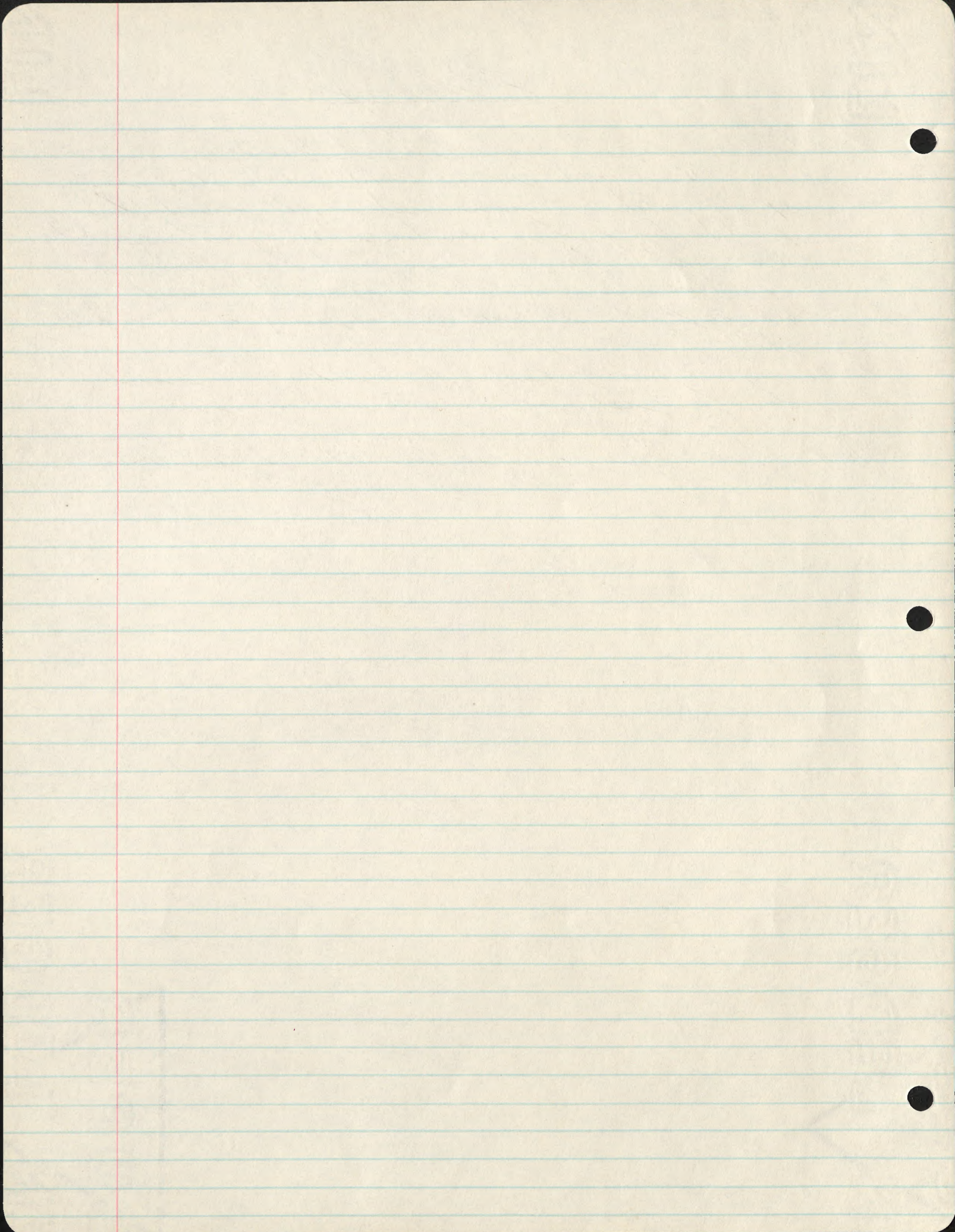
Apr. 30 5 (1 juv) shot. 1 sub adult  
 shot from a small tree in  
 the indicated forest edge of the  
 lagoon. The other 2 adults were taken in  
 forest trees in inundated area near lagoon.



Phalaris

- May 3 Bernard Camp, Derby R., New Guinea 50-75m.  
2: 1 in 893 snare, 1 shot. The large gray  
sp. was taken in a snare set on the ground; ~~from~~  
forested slope of low mountain ridge. The maculature  
was shot from a large forest tree bordering  
the lagoon. It was sitting on a small branch  
some 40 ft above the water in apparently a semi-active  
state.
- May 5 1 shot by Woods collecting log. He is said  
to have taken it on the hill slope  
west of camp "Jow".
- May 7 2 shot; 1 by Bureau boys and 1 by my collector.  
Both taken near the lagoon.







# Phascogale

July 31 Lake Habbema, Netherlands New Guinea 3225 m.  
1 individual in the 150 traps. This animal was taken along a thinly forested *Litsea* spur. Here there is an overgrowth of *Podochloa* about the base of which are clumps of moss. Exact habitat unknown for it was brought in by a collector.

Aug 5 Lake Habbema, Netherlands New Guinea 3225 m.  
1 individual in 392 traps. This animal was taken from a trap set in a small runway through the low bushy vegetation of the northern bog slope. The immediate vegetation was not over 4 ft in height, in thin small clumps, and with an overgrowth of moss. The moss seems to grow up into these clumps forming a "laid" clump of its own. It was in a trail between two such clumps that the animal was taken. The stomach of this animal contained vegetable matter of what appeared to be the fleshy fruits of *Gaultheria*.

Aug 7 Lake Habbema, Netherlands New Guinea 3225 m.  
1 individual in 388 traps. It was taken in a trap set in a trail through the moss, in an open low bushy thicket. The moss had formed a mat over the ground and clumps about the low growing bushes. There were scattered *Litsea* trees in the vicinity. The region in which it was caught was the lower slope of the <sup>low ridge</sup> broad spur extending from the eastern side of the grass valley stream. There are numbers of small holes 3x2" x 2 to 6" deep in the earth and patches of moss which have been reported in this vicinity. It is quite possible that this animal is disturbing the ground in such a manner in search of insects or other small invertebrates. The stomach contents was carefully scrutinized by Dr. Foxgenus the entomologist "Contained insect parts of *Luthea*, grubs, and larvae."



Aug 8 Lake Habbema, Netherlands New Guinea, 3225m.

2 specimens <sup>in 386 traps</sup> were brought in today by my collecting boys. They were taken in the mouse traps set about the northern bog shore. The stomach had 4 functional mammary glands from which milk could be squeezed. Found in stomach <sup>1/8</sup> as well as <sup>1/8</sup> traps were.

Aug 9 Lake Habbema, Netherlands New Guinea, 3225m.

Round shot on individual in the mossy forest west of the bog. According to his report it was shot while climbing about the mossy trunk of a tree. It was about 3 ft. off the ground when shot. He described it as being active and apparently well suited for an arboreal habitat. It was found in the center of this forest rather than the bog which I had previously expected. There were several ticks in its ears and about the base of the tail.

Aug 11 Lake Habbema, Netherlands New Guinea, 3225m.

2 individuals in 387 traps. The small species of the two was taken in a small trap set on a low, well drained open grass (10 ft) above the grass valley. Here the vegetation was in a thin low growing rhododendron bushes with grasses and moss partially covering the ground. The larger of the 2 species was taken 1/2 way (200 yds) up the hill slope where the rhododendrons grow in thick clumps and there is a heavier moss completely covering the ground and in clumps about the base of bushes.

Aug 13 Lake Habbema, Netherlands New Guinea, 3225m.

1 in 375 traps. Brought in by a collector who said that it was caught in a trap set in the low brushy hillside with a ground cover of moss.

Aug 14 Lake Habbema, Netherlands New Guinea, 3225m.

1 in 375. Brought in by collector who said it was taken in much the same type of habitat as that taken on the previous day (Aug 13).



# Phascogale

Aug 18 Lake Habbema, Netherlands New Guinea 3225m.

2 in 375 traps. They were brought in by my collector who said that one was taken in a trap set along the thick grass at a run the mouth of the outlet stream and the other in the heavy brushy hill slope above (to north of) the outlet stream.

Aug 19 Lake Habbema, Netherlands New Guinea 3225m.

1 in 375 traps. The animal was taken in a trap set near the central part of the strip of grass bordering the southern portion of the outlet stream. The grass forms a strip about 50 yds. wide along the lower canyon slope. Here the grass is thick and heavy and there are a few scattered bushes but barely extending 6 in above the 18 in high grass. The trap was set in a small runway of the purposing of a small bush, that is where the grass and bush strips intermingle.

Aug 20 Lake Habbema, Netherlands New Guinea 3225m.

1 in 345 traps. This animal was taken in a trap set just inside a <sup>heavy</sup> brushy thicket bordering the grassy <sup>low</sup> stream margin of the outlet stream. The conditions here were those of heavy tall brush with a mossy ground cover which forms hummocks <sup>about</sup> the base of bushes, logs, etc.

Aug 22 Lake Habbema, Netherlands New Guinea 3225m.

3 in 382 traps. The 2 ♂'s were taken along the grassy edge of the outlet. The traps were set in small runways through the grass within 3 ft of the water edge. The other was taken along the edge of the bog shore. The trap was set on a peaty hummock within 6 in of the water. The vegetation was an open growth of coarse sedge which grow about the lake shore. 6 in. island was a flat high bank with a growth of



short grass and <sup>sometimes</sup> clumps of tall grass about.  
Since my arrival here I have continually  
noticed diggings in the earth. They are common  
about the lake shore and in moist places along  
ridges or rivers where there is not a complete  
canopy of trees or brush. These diggings consist  
of holes 4 to 7 inches deep and about  $1\frac{1}{2}$  to  $2\frac{1}{2}$  inches  
in diameter. The dirt usually removed in small  
chunks is piled at the entrance. The hole  
goes in at an angle of more than  $45^\circ$  and  
often nearly straight down but never entirely straight.  
These burrows or holes are probably made by the  
animals in search for insects and worms.

Aug. 23 Lake Habbema, Netherlands New Guinea 3226m.  
2 in 384 traps. According to the collectors  
who brought them in they were caught in  
traps set near the lake shore. They were  
probably taken in small runways through the  
grass <sup>in or</sup> near the border grass of the lake  
shore.

Aug. 24 Lake Habbema, Netherlands New Guinea 3225m.  
3 in 386 traps. Brought in by collectors  
from traps set along lake border, and on  
canyon slope above outlet. One and only ♀ had  
3 young (in alcohol) in pouch. This pouch seems  
to be little more than a fold in the skin  
of the belly about the mammary glands. The  
3 young were loosely attached to the tits. From  
the size of the 4 mammary glands it would  
appear that there were 4 young, one being lost  
in rut to camp or when mammal was caught in trap.  
I have examined the stomachs of a number  
of these animals and they all seem to  
contain insects, grubs, and a small amount of  
vegetable matter.

Aug. 26 Lake Habbema, Netherlands New Guinea 3225m.  
1 in 386 traps. Brought in by collectors.



# Phaseogale

Aug 28 Lake Habbema, Netherlands New Guinea, 3225m.  
1 in 384 traps Brought in by collector. Probably  
taken in similar habitat as indicated Aug. 23.

Sept. 15 2 km. N.E. Wilhelmstein, Netherlands New Guinea 3560m.  
One individual was captured yesterday by one of  
my collecting boys as he was setting traps in the  
low S.W. side of the camp valley. The individual  
was seen running through the thick, about (8") grass  
and was pursued upon by the boy. The habitat  
in general was that of a grassy hill slope with  
scattered tree ferns and numerous small shrubs.

Sept. 16 2 km. N.E. Wilhelmstein, Netherlands New Guinea 3560m.  
1 in 343 traps. This individual was caught in  
a trap set in a grassy slope at the bushy  
edge of the forest border. It was taken near  
the one captured on Sept. 15.

Sept. 27 2 km. E. Mt. Wilhelm, Netherlands New Guinea 3900m.  
1 in 114 traps. Taken in a steel trap set  
in runway through a bushy thicket. The  
general region is that of an old talus slope  
of large boulders which is now overgrown  
with scrubby trees, bushes, ferns, mosses etc.  
It apparently has had some skin disease.

Oct 11 9 km. N.E. Mt. W. Lake Habbema, Netherlands New Guinea, 2800m.  
1. One individual was shot by my collecting  
boys and the other was brought in by a  
Pipon. The one shot by the collector was  
taken in the mossy forest with its forest trees,  
open bushy undergrowth, and a mossy covering of lichen,  
earth, trees, etc.

Oct 14 9 km. N.E. Lake Habbema, Netherlands New Guinea 2800m.  
2. Two individuals shot by Brown's collecting  
boys. According to him the walk was  
on the ground a moss covering of the lichen and



the ♀ shot from a tree some 25 feet ~~ft~~  
above the forest floor.

Oct 16 9 am. McLade Habema, Netherlands New Guinea 2800m.

3 individuals brought in, one by a  
Papuan (♂ white eared), and two by Road. The one  
which the native brought in is probably from  
a much lower altitude for with it was a  
pigon which according to Road occurs only at  
lower levels. The ♀ white eared shot by Road ~~etc~~  
from a tree <sup>of the mossy forest</sup> some 25-30 ft. up. According to his  
statement it was crawling about on the trunk and  
then onto a limb before finally shooting it.  
The other individual, a smaller species, was shot  
at a higher altitude (3000 m). Seen running through  
or about the mossy clumps and sedge clumps of a  
more open country, not the mossy forest.

Oct 17 9 am. McLade Habema, Netherlands New Guinea 2800m.

3: 2 in 431 traps the 3rd was brought in by  
a native. The two smaller species were taken by  
collectors. ~~Two~~ more traps set in small runways  
in and about the litter of the forest floor. The  
larger species, white eared, was taken by a  
Papuan.

Oct 18 9 am McLade Habema, Netherlands New Guinea 2800m.

3: 2 in 425 traps. 1 taken by collector. (total 3). The other  
species known to occur there were caught today. The  
large white eared least was taken on a trap set in  
runway through the litter and herbaceous plants on the  
mossy surface of a tree. The dark striped species  
was caught by a collector this afternoon. It was seen  
running about on the ground. The other species, a small  
mouse brown colored one, was taken in traps set in an  
inconspicuous runway along the base of a log which  
was covered with moss and low growing plants.

Oct 19 9 am McLade Habema, Netherlands New Guinea 2800m.

3, 2 in 425 traps. The dark striped individual







in by the Papuans were probably taken at a lower altitude.

Oct 25

ghm McLeh Hebbema, Netherlands New Guinea 2800m.

1 shot by Taxopene. It was on a moss covered fallen log in the undergrowth of the mossy forest.

Oct 26

ghm McLeh Hebbema, Netherlands New Guinea 2800m.

3: 1 in 409 traps, <sup>(at dark at night)</sup> brought in by Dyak, who said it was taken by him. He had run it running about on the ground and into a hole to escape capture. Another, white eared, was brought in by native probably from below. The one taken in traps was brought in by collector who said it traps were set in moss about the lower base of a tree.

Hand watched one of the "white eared" species today. The following is copied from his notes Oct. 26, 1938. "Phascolophaga, white eared. - Today in the forest I watched one for some time through glasses at 65 yd. perhaps ten minutes, about 10:00 A.M. It was apparently searching for food on the moss covered trunks and branches of second story trees 10' to 35' up, in good forest. A very active beast, it usually worked its way slowly up a trunk and along branches, poking its nose here and there into the moss, continually keeping its nose close to trunk. The upper or underside of branches makes no difference to it and it was frequently running along their underside, frequently, on smaller limbs jumped from one to another as nimbly as a squirrel. To get to next tree it would run down the trunk head first very quickly, to where it could cross in undergrowth. Most of the time it progressed slowly, exploring the moss. The tail was kept in line with body close and trails, when sitting on branch the tail hangs free, it curved slightly slightly forward, the white tip making this conspicuous.



Phascogale

Once it sat up for some moments licking its hands and washing its face by rubbing its hands over its snuzzle. My attention was first called to this beast by idly watching a friendly *Syngnathus* which was playing about near it. During the whole time I watched of this *Syngnathus* was never far away 3'-15' not scolding nor excited but just friendly as when near any of the birds with which it so frequently consorts."

Oct 27 9 km N.E. Lake Habbema, Netherlands New Guinea 2800 m.

2 brought in by natives. The melanistic one was probably taken at a much lower altitude for the skin about the nose and feet showed signs of drying.

Oct 28 9 km N.E. Lake Habbema, Netherlands New Guinea 2800 m.

1 brought in by natives. It appeared to be a rather fresh killed beast indicating it was taken in the immediate vicinity.

Oct 29 9 km N.E. Lake Habbema, Netherlands New Guinea 2800 m.

4: 2 in 413 traps, 2 brought in by collector. #5273 and #5274 taken in traps set in mossy forest. Brought in by collector. The two that were taken brought in by natives both were fresh specimens so we may assume that they were taken somewhere in the near by vicinity.

Oct 30 9 km N.E. Lake Habbema, Netherlands New Guinea 2800 m.

7: 1 in 413 traps, 6 brought in by natives.

Oct 31 9 km N.E. Lake Habbema, Netherlands New Guinea 2800 m.

3: 1 taken in 413 traps, 1 brought in by natives, 1 shot by collecting boy. The latter according to the boys was seen running about on the ground on mossy cover of the forest floor.



Nov. 1 9 km N E Lake Habbema, Netherlands New Guinea 2800m.  
2: 1 brought in by natives. 1 shot by Dr. Janssens #5317. The latter according to him was shot while it was running in and clut the bushy undergrowth of the mangrove forest.

Nov. 2 9 km N E Lake Habbema, Netherlands New Guinea 2800m.  
3: 2 shot by Rondo collecting boy who said they were running clut in trees. 1 brought in by a native.

Nov. 5 9 km N E Lake Habbema, Netherlands New Guinea 2800m.  
1 brought in by natives. Presumably was taken some distance below camp.

Nov. 6 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
1 brought in by natives.

Nov. 7 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
2 brought in by natives. The ♀ has young, the first embryos of the species found up to date.

Nov. 8 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
2 brought in by natives.

Nov. 9 Bela River 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
3 brought in by natives.

Nov. 10 Bela River 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
2 brought in by natives.

Nov. 12 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
3 brought in by natives.

Nov. 13 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
2 brought in by natives.

Nov. 14 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
2: 1 brought in by natives; 1 in 308 traps. #5566.  
Taken in trap set at the mangrove bushes of a







Nov 25 Beli R. 18 km N Lake Habbema, Netherlands New Guinea, 2200 m.

4: 3 brought in by natives, 1 in 454 tags.  
Taken in obscure runway over the ~~open~~ leafy forest floor, in the open undergrowth of the same forest.

Nov 26 Beli R. 18 km N Lake Habbema, Netherlands New Guinea 2200 m.

5 brought in by natives.

Nov 27 Beli R. 18 km N Lake Habbema, Netherlands New Guinea 2200 m.

8 brought in by natives. The 4 juveniles when brought in were still alive and clinging to the tits of the adult. This is usually the case and several young will remain alive and attached for as long as 24 hrs. At death the smaller young still remain fast to the tit. The large juveniles (adults) today uttered a faint squeaking noise at intervals of about 1 sec. and all the time aimlessly struggling to gain revivification. ~~At~~ At this stage these young have no sense of equilibrium or in other words which side is up.

Nov 28 Beli R. 18 km N Lake Habbema, Netherlands New Guinea 2200 m.

3 brought in by natives.

Nov 30 Beli R. 18 km N Lake Habbema, Netherlands New Guinea 2200 m.

7 brought in by natives. These white ones have 4 mammae and as a rule 4 young although 3 or less are reared. The pouch is little more than a fold of skin over the mammary gland rather than the defining pocket of the phalanges. The lateral folds are more pronounced than the anterior or posterior.

Dec 1 Beli R. 18 km N Lake Habbema, Netherlands New Guinea 2200 m.

3: 2 brought in by natives, 1 shot by Bruce. According to him it was climbing about on the trunk of a large tree some 10 ft off the ground. Area was that of heavy forest.



## Phascogale

- Dec 2 Bela R. 15 km N Lake Hellen, Netherlands New Guinea 2200m.  
1 brought in by natives.
- Dec 3 Bela R. 15 km N Lake Hellen, Netherlands New Guinea 2200m.  
6: 5 brought in by natives, 1 brought in by collector from 399 traps. Taken in forested area.
- Jan 11 15 km SW Rendah Camp Idenburg R. Netherlands New Guinea 1800m.  
1 in 425 traps. Brought in by collector who said it was taken on the mossy covered floor of the mossy forest. Area flat of mossy forest with moderately thick second story growth and scattered undergrowth. Litter such as fallen logs very common.
- Jan 14 1 shot by Rook this morning. According to his story it was taken some distance off the ground in the mossy trees of the second story. It was moving head first down the tree when shot. The area was a ridge with rather thick second story growth.
- Jan 15 1 in 28 steel traps. This small beast was brought in by collector who said it was taken in steel trap set in large runway. This runway was probably calculated by some larger animal such as *Dorcopsis* and this animal just happened to be using the same for his commensals. The area was mossy forest on a steep hill slope with scattered big trees, moderate second story growth, and a rather thick undergrowth on the littered forest floor.
- Jan 16 1 in 28 steel traps. Brought in by collector who said it was taken on surface runway through brushy thicket near a large mossy tree.
- Jan 17 1 shot by Rook collecting log. He said it was climbing in a tree when he shot it.
- Jan 18 1 in 28 steel traps. Brought in by collector. Said to have been taken from trap set in large <sup>forest floor</sup> runway.
- Jan 19. - Today the boys showed me the traps in which the beast was taken. It was a rather large trail through an area of thick undergrowth, perennials, and second story vegetation. Litter was common on the ground in some places a confused tangle with the undergrowth.



Jan 19 <sup>Burkhead Camp</sup> 1.5 km S W Idenburg R., Netherlands New Guinea 1800 m.

2 in 421 traps. Brought in by collector.

According to the the ♀ was in the trap and the jaws lay dead some 3 or 4 ft. distance. There were 4 tits in the open pouch, only 1 of which was functional.

The pouch is certainly a rudimentary structure in the breast consisting of little more than the tits with the modified hair. There is also a slight fold at the anterior border of the pouch area but this is

practically obliterated by the enlarged mammary glands

Jan 21

1 in 421 traps. Brought in by collector. This

adult had 3 <sup>measuring</sup> eggs 9 mm from wing to crown. The pouch or rather the pouch area including surrounding

the 4 tits measured 20 mm. long by 18 mm wide. These are inside measurements as to depth and do not include the low walls of the pouch which tend to flare outward. The fold of the skin <sup>about</sup> ~~over~~ the pouch area measured

5 mm in height at each side and 3 mm in height posteriorly. Anteriorly there was no

flap or wall to the pouch area. This shows a tendency toward an anterior opening as compared to the posterior opening in a similar pouch of Dasycercus.

Stomach contained remains of insects and other small invertebrates.

Jan 23

1 shot by Rando collecting boy. No post-mortem.

Jan 25 Aracaria Creek Idenburg R., Netherlands New Guinea 800 m.

1 brought in by a collector Dyak coolie.

Jan 27 1.5 km S W Burkhead Camp Idenburg R., Netherlands New Guinea 1500 m.

1 <sup>in 215 traps</sup> brought in by collector. He said it was

taken in running over the moss at the base of a large tree.

Feb 5 1.8 km S W Burkhead Camp Idenburg R., Netherlands New Guinea 2150 m.

1 shot by Rando collecting boy. According to

him it was sitting inactive hunched up in a mossy log in a tree. [Perhaps sunning itself.]



Phascogale

Feb 6 18 km SW Burnard Camp, Darling R., Netherlands New Guinea 2150 m.

1 shot by collecting boy. Said it was running over the forest floor and climbed up, 1 m., a tree where it was shot. Stomach contained remains of insects. Permitted through forest with undergrowth of bamboo.

Feb 9

1 in 411 traps. Brought in by collectors. Stomach contained the remains of insects. There was no apparent enlargement of the uterus showing that young embryos were present or that they had been recently born. The 4 tits however were enlarged and the mammary glands as well, exuding a watery like fluid when pinched. Total of 4 tits all apparently functional. The following is diagrams and measurements of tits, pouch and relationship to vagina.

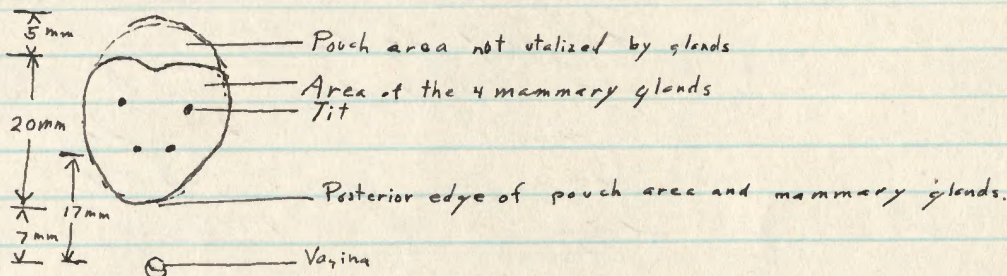


Diagram of pouch area and vagina

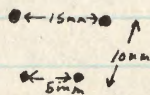


Diagram of tits

There must be some variation in measurements of males here and the actual living animal. There would also be variation with the different positions the mammal might assume. These measurements may be of some value and interest when considering that they were made on a freshly trapped individual. There also might well be and probably is a change in measurements with pregnancy and the young's development.

Feb 14 6 km SW Burnard Camp, Darling R., Netherlands New Guinea 1200 m.

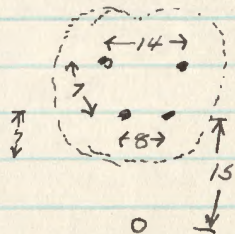
2 1 shot by Dyer + with caught in 27 stake traps. According to Dyer this one was shot while it was running along on the ground and under litter.



The other was taken in trap set in forest trail.  
Both were taken during the day time, one shot  
in morning and the other in second time  
taking traps, between 7:00 A.M. and 2:00 P.M.

Feb. 15 4 km SW Baniang Camp, Ghalung R., Netherlands New Guinea 1200 m.

1 shot this morning by Rand. According  
to his statement it was first seen on a tree about  
10 ft through starting in and out of holes. It then  
took notice of him running down back side  
of tree and up another (8 in diameter) to a distance  
of some 15 ft. shot. Following notes on pouch  
Pouch area 28 x 20 mm.



The 4 tits all moderately large  
but not lactating.

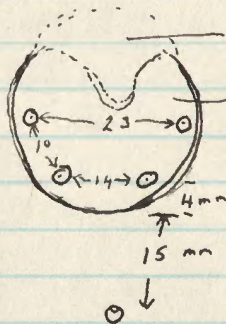
The lateral flaps small 2-3 mm.

No anterior or posterior flaps.

Rather long posteriorly directed  
hair at the anterior region of  
the pouch.

Feb. 18

1 in 223 rat traps. Brought in by natives  
This individual # 7517 is a relatively small ♀.  
Each of the 4 mammary glands and tits are  
enlarged but not lactating.



Pouch area but no gland. Space hair as on gland area.

Gland area

The fold about the pouch area  
which forms an incomplete  
pouch is a flap of skin 3 mm.  
high later on lateral walls and  
2 mm. high posteriorly. There is no trace of fold anteriorly  
but rather a space 20 mm. broad ~~which is~~ between  
the horns of the lateral wall.

This afternoon examined traps in which individual  
was taken. The traps in a runway at edge of log in  
littered bushy area of moist hill slope.



# Phascogale

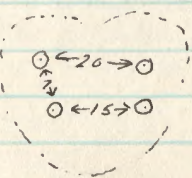
- Feb. 22 6 km SW Baramba Camp, Idenburg R., Netherlands New Guinea 1200 m.  
1 shot by Versteegh. He said it was seen running over the ground and then up into a tree when it was shot.
- Feb. 25 See notes for Peromyscus important.
- Feb. 27 2 in 221 rat + 17 steel traps. - The female had 4 small non-lactating young, no emb. although ovaries were enlarged. The male had non-bifid penis.
- Feb. 28 1 in 182 snares. Brought in by collector. Stomach contained insect remains. Penis not typed.
- Mar. 3 1 shot by <sup>my</sup> collecting boy. Said to have been climbing in tree.
- Mar. 4 1 in 209 snares. Brought in by collector. Stomach empty.
- Mar. 9 1 in 231 snares. Brought in by collector. It had been rotting ~~in~~ in traps for several days. Said to have been taken on by crossing a stream.
- Mar. 12 4 km SW Baramba Camp, Idenburg R., Netherlands New Guinea 850 m.  
1 shot by Reed. According to her it was on the ground; had no time to climb tree; inspecting snares. Stomach contained insect remains. Open pouch containing 6 mammae 5 of which were lactating. No emb. No ym.
- Mar. 16 1 in 209 rat traps. Brought in by collector.
- Mar. 19 1 in 598 snares. Taken in a snare set in forest nursery. Habitat - agathis forest with moderately heavy undergrowth; lichen common; leafy forest floor. It's a heavy ~~stocky~~ sturdily built head as compared to species previously taken on this expedition. Stomach empty except for refuse ~~taken~~ <sup>eaten</sup> while animal was in traps.
- Mar. 20 1 in 643 snares. Brought in by collector. Penis diseased. Stomach contained insect remains. As near as I can remember all specimens of this species have been taken in the agathis forest.
- Mar. 21 1 in 150 snare traps. Brought in by collector. Sub-adult. Pouch area resembling other ventral belly region.
- Mar. 23 2 in 209 rat traps + 769 snares. Brought in



by collectors. Pouch area of ♀ only slightly differentiated

Mar. 27 4 km SW Bernhard Camp Denbong P. Netherlands New Guinea 850m.

1 in 207 rat traps. Brought in by collector. Taken in runways on ground in the second growth forest bordering the Agathis forest. Pats on pouch area - The pouch area contains a reddish hair which is in part due to a greasy secretion. This grease may be rubbed off on finger or piece of paper when pressed over pouch. The hind shaped pouch measures 30 broad x 20 mm long.



Diagon to left of tte in pouch area with thin spacing.

From position tte to region is 27 mm.

Position margin of pouch to region is 16 mm.

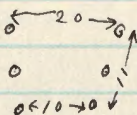
There are 4 mammae, enlarged but not lactating. The outer edge of the pouch area is well thickly lined with long hair which when hind legs are near together, in normal position, tends to envelope the tte and the central thick haired pouch area. Stomach contains remains of insects.

Mar. 27 6 km SW Bernhard Camp Denbong P. Netherlands New Guinea 1200m.

7; (6<sup>Juv</sup>)<sup>small</sup> 20<sup>1</sup> x 3 days Brought in by collectors.

Dimensions of pouch 35 x 30

6 tte all functional and with young



Posterior lip of pouch to region 12  
" " " to posterior tte 15

Pouch form a cap with lateral walls 22 mm, anterior wall of pouch 10 mm. and posterior wall not a fold of skin as other walls but rather protruding part of the thigh. Protruding long hair from the rim of the pouch except in posterior region. Hair of pouch is fine



Phascogale

sparsely scattered on inside of pouch. Hand suggest that perhaps the young are carried during life in the deeper part of the pouch which is to either side of the 1st row close to the lateral walls.

Apr. 2 H.K. SW Burnland Camp Denburg R. Netherlands New Guinea 850 m.

1 in 27 steel traps. Taken on ridge slope north of camp. Brought in by collector. Stomach contained remains of insects. 4 mammae not lactating.

Apr. 6 1 in 1075 snares. Brought in by collector.

Stomach contained remains of insects, no vegetable matter.

Apr. 20 Burnland Camp Denburg R. Netherlands New Guinea 75 m.

1 in 463 snares. Brought in by collector. Taken on lower <sup>mountain</sup> slope of above flood plain.

Apr. 23 1 in 570 snares. Brought in by collector.

Taken on <sup>lower</sup> mountain slopes above flood plain. Stomach contained remains of insects.

Apr. 24 1 in 27 steel traps. Brought in by collector.

Taken on lower mountain slopes above flood plain.

Apr. 25 3 in 602 snares. Taken on lower mountain slopes.

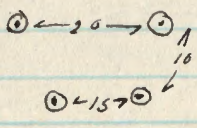
The ♀ was in trap and according to collector 2 young were about her, 1 being captured the other escaped. This <sup>500</sup> young = 7914 was apparently still suckling the mother although quite able to run about by itself. Following are measurements of pouch.

Vertical to posterior lip of pouch area 9 mm.

Posterior lip of pouch area to anterior row of the 10 mm.

Length of pouch area 30

Width of pouch area 28.



The pouch area is broadly bluntly heart shaped with slightly <sup>to</sup> elongated hair about the margin. The area itself being sparsely hair with few hair.



Apr. 29 Burhead Camp, Shinkong R., Methuende New Guinea 50-25m.

2 in ~~234~~<sup>234</sup> net traps<sup>+27 stubs +234</sup> Taken on narrow  
strip of land along edge of lagoon which  
is above the present high water level  
but which will be isolated soon if water  
continues to rise. # 7968 taken in stub  
traps set on ridge of low mountain slopes.

May 1

<sup>in 853 + new + 27 stub traps and</sup>  
2 brought in by collector. Taken on  
lower mountain slopes.

May 2

1 in 27 stub traps. Brought in by collector.  
Taken on lower mountain slope above flood plain.

May 5

1 in 27 stub traps. Brought in by collector  
from hill slope.



Wm B. Richardson  
1938

## Pipistellus

July 13 Hollandia, Netherlands New Guinea.

1 live individual was brought in yesterday evening by a local native. According to his story it was taken in the near by jungle.

Dec 12 Belim B., Netherlands New Guinea 1600 m.

1 shot yesterday evening while flying over camp. This bat was apparently feeding in early evening [6:40] <sup>in and about</sup> among the <sup>upper</sup> foliage of the casuarina trees. Their flight was between 10 and 20 ft above the ground, about half way up the casuarinas. They have a rather slow flight with numerous beats. These observations are not done on specimens procured but also on 4 or more seen on other occasions.

Dec 17 Belim B., Netherlands New Guinea 1600 m.

1 individual shot by Reed. According to him it was flying  $\frac{1}{2}$  to  $\frac{2}{3}$  up about the casuarina trees. This bat is apparently active during the hours 6:30 to 8:00 in the evening. It is not common but has rather a <sup>distinctive</sup> ~~conspicuous~~ flight.

Mar. 22 4 Km SW Bumband Camp, Mearung R., Netherlands New Guinea 850 m.

1 shot yesterday evening by myself. It was flying relatively high (50 ft) above the forest floor over the tops of the second growth of the forest. It has rather a slow deliberate flight with rapid beats in pursuit of insects. Activities as far as I could see were limited to a period of about 20 min from 6:25 to 6:45. After 6:45 none were seen in this high leisurely flight. Perhaps they were feeding somewhere else.

Mar. 29

1 shot yesterday evening. Flying about 30 ft above forest floor in a relatively slow deliberate flight with occasional rapid beats.



Mar. 30 4 km SW Rendam Camp Idenburg R., Netherlands New Guinea 850 m.

1 shot yesterday evening. It was flying about 30 ft above the forest floor through a small opening in the trees of the upper flood plain. Flight is slow and rather constant with occasional very rapid burst in pursuit of insects.

Apr. 22 Rendam Camp Idenburg R., Netherlands New Guinea 80 m. - 75 m.

1 shot yesterday evening by hand.

Apr. 23

1 shot yesterday evening. It was flying near the top of the second growth canopy. The flight is slow and steady with occasional quick burst as it feeds <sup>through</sup> the small openings between the trees of the <sup>second growth</sup> mixed second growth and rain forest.

Apr. 26

1 shot. It was flying along forested edge of lagoon some 10 ft above water.

Apr. 27

1 shot. Flying slowly about edge of forest ~~bordering~~ <sup>at mouth of</sup> small river over lagoon.

Apr. 28

1 shot. Same locality as yesterday specimen.

May 1

1 shot. Flying about forested edge of lagoon some 10 ft above the flood water.

May 2

1 shot. Along forested border of flooded lagoon.

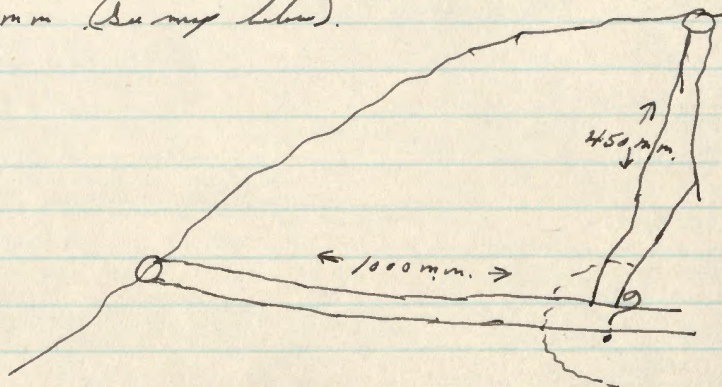


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## Pogonomys

June 25 Hollandia, Netherlands New Guinea.

One individual was brought in this morning by two of my Dyak collectors. They said that they had dug it out from a hole in the ground. This afternoon I visited the spot. (See picture). The burrow was located on the east facing slope of one of the small hills to the south west of Hollandia about  $\frac{1}{2}$  mile. The forest here is one that has been heavily cut over there remaining only a thick brush stand of small trees, shrubs, dead and decaying stumps and a few scattered, larger trees which had probably been unsuitable for lumber. The ground beneath the thicket is thin but completely covered with a thin layer of humus and leaves. The soil itself is a rich, red, and deep; with little indications of zonation. The burrow itself had two entrances 2-3" in diameter one going in at an angle <sup>(10°)</sup> downward into the slope, the other went almost straight down (90°) to join with the other below. The depth was 450 mm; the length from entrance to bottom 1000 mm (See map below).



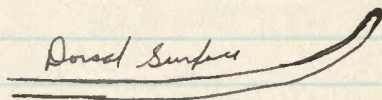
The bottom reached? was not surveyed and at best only a rough sketch can be made of the burrow system for the Dyaks had obliterated most of the passage way.

Other burrows which were examined near this same locality and which possibly belong or had belonged to individuals of the same species had been made where roots of trees had been. These roots having decayed and left a passage the firm red soil. There was a little evidence about the entrance that the animal had done a small amount of the actual digging of the burrow. In one of the burrows there was



dung and beetle middens (seeds, husks, etc) strewn along  
the burrow way.

The tail though generally not prehensile  
has a definite upward curve as shown by diagram.



July 4 Hollandia, Netherlands New Guinea.

Caught one individual in one of the  
443 traps. It was in one of the 100 traps set  
by the Papuan collectors north east of Hollandia.

July 15 Hollandia, Netherlands New Guinea.

A single specimen was brought in  
today by Mr. Birkman. He said that  
he had caught it at his plantation  
which is located 4 km. east north east of  
Tebati.

July 20 Hallima Lake, Netherlands New Guinea. 3225m.

One individual was taken in the 50 traps.  
The trap was set at the base of a small relatively  
dry sylvan clump. The clump was situated on a ridge  
one of the drier spots of the trap line. Along the  
base of this clump was a small poorly defined trail.  
Away from the clump was a small <sup>514 ft</sup> patch of level, dry  
lichen covered ground. The entire area had a dryer  
aspect than most spots where the other traps were  
set. The stomach contents indicated that this  
animal had been living on fruits and berries. No green  
vegetation nor animal matter was found. The tail as  
compared to the Hollandia form is less curved at the  
tip but the dorsal line tip is more pronounced.

Aug 2 Lake Hallima, Netherlands New Guinea. 3225m.

Two individuals in the 372 traps. One  
was taken from the ~~grassy~~ <sup>drier</sup> ridge <sup>south south</sup> <sup>east</sup>  
of camp, the other from along the lake shore. The  
latter was caught in a trap set in a small



## Pogonomys

run way through the low (2'-5') thick grass near (11') the edge of the lake. Moist conditions prevailed here not the type of habitat in which one would expect to find such a mammal as this

Aug 3 Lake Habbema, Netherlands New Guinea 3225m.

1 individual in 394 traps. The ~~an~~ animal was caught in a trap set in a small runway near the lake shore. Here there was a thick strip of grass through which the runway passed from one low clump of bamboo to another. These small bush clumps had a clump of moss at its base into which the runway disappeared.

Aug 8 Lake Habbema, Netherlands New Guinea 3225m.

1 in 388 traps. This individual was caught in a runway through a low open bushy area. Here there was a ground cover of moss which was in clumps about the bamboo.

Aug 12 Lake Habbema, Netherlands New Guinea 3225m.

2 in 375 traps. One of the individuals was taken in or near the middle of a mossy forest where the canopy was a bit more open allowing a heavy growth of tall *rhododendrum* underneath and a heavy mossy floor cover. The trap was set in a small runway through the moss covered stems of the underbrush. The other individual was taken in the grassy valley in a trap set in a small trail running through the dense grass which covered the gentle slope in this area. There was no bush nor tree ferns within 100 ft of the region; it was a solid stand of <sup>third</sup> grass about 20 inches in height. The trail was small but well defined and not evident from the above.

Aug 13 Lake Habbema, Netherlands New Guinea 3225m.

2 in 375 traps. Brought in by collectors. One said



to have been taken by near the top of the ridge west of the grass valley where there is a low bushy growth and a mossy ground cover.

Aug 14 Lake Habbema, Netherlands New Guinea 3225 m.  
2 in 375 (244). The larger species was taken in a trap set <sup>in morning</sup> beneath a tall <sup>(60 ft)</sup> bush on one side of the bush was a <sup>small</sup> summity grassy region bordering the small stream. On the other side of the bush was heavy <sup>tall</sup> bushy canyon slope with a mossy ground cover. This animal was taken in what would be called the border between the heavy bushy hillside and the narrow grassy stream <sup>bed</sup>. Location may be up the small stream west <sup>from</sup> the <sup>west side of the</sup> bay. The other <sup>the smaller sp.</sup> *Pogonomys* was taken in a heavy grassy area on the upper slope of the grassy plain across (west) of the bay. This heavy grassy patch is relatively free of any herbaceous plants except those that are obscured by the grass itself. The traps in which it was caught was set 30 ft away from the nearest tree ferns or bushy area. Another specimen was taken in same region two days ago.

Aug 18 Lake Habbema, Netherlands New Guinea 3225 m.  
1 in 375 traps. Brought in by collectors. Not prepared because of damaged skull and skin.

Aug 19 Lake Habbema, Netherlands New Guinea 3225 m.  
1 in 375 traps. Brought in by collectors. Don't know habitat.

Aug 20 Lake Habbema, Netherlands New Guinea 3225 m.  
2 in 345 traps Brought in by collector. One was alive and is being kept in cage to study. Watched it for nearly two hours today climbing about the branches within its cage and never once did it actually use its tail in a dorsally prehensile fashion. For the most part the tail is used as a balancing organ by swinging it in space or by resting it against another object. Several times the tail was loosely raised about



Pogonomys

a limb in a semi prehensile position.



Probably the most interesting thing about this is (in illustration) that when x is marked on illustration the dorsal or near dorsal part of the tail was against the limb. This semi prehensile use of the tail was not the usual thing. Twice during the time watched the animal slowly half curled its tail about the wire across at the top of the cage. In this case the animal used its tail in a dorsal position. The animal is very active in the cage spending most of its time in a nervous search about the cage for an avenue of escape. Its movements are quick and active quickly and easily moving about the small limbs put in the cage. Several times it was seen to jump from 4 ft & inches landing with ease on a small limb.

Aug. 21 Lake Halberna, Netherlands New Guinea, 3225 m.

The one specimen caught today in 387 traps was taken in an open bush thicket with a ground cover of moss clumping up about the bases of bushes. The traps was set in a small runway through these bush moss clumps.

Aug. 22 Lake Halberna, Netherlands New Guinea 3225 m.

1 in 382 traps. This individual was taken in a trap set in a runway through the grassy border of of the outlet stream. Stenomys, Hydromys, Rattus and Phascogale have been taken in a similar type of habitat.

Aug. 23 Lake Halberna, Netherlands New Guinea 3225 m.

1 in 386 traps. Individual brought in by collectors.



Aug. 24 Lake Habbema, Netherlands New Guinea 3225 m.  
1 in 384 traps. Being kept alive for observation. Spent several hours watching the least climb about the limb in its cage but at no time did I observe the animal use its tail in a <sup>directly</sup> prehensile fashion. The tail was used solely as a balancing organ swinging in the air or resting on an adjoining limb. The tip of the tail was curved with a  $\frac{1}{4}$  inch upcurve to the cord. It is a very active animal along small limbs or jumping from limb to limb.

Aug. 25 Lake Habbema, Netherlands New Guinea 3225 m.  
1 in 384 traps. Brought in by collectors.

Sept. 12 2 km. NE Wilhelmina-top, Netherlands New Guinea 3560 m.  
1 in 404 traps. Brought in by collectors from a line of traps that extend up the hill to the NW of camp. The region is one of open sub-alpine forest and grass. ✕

Sept. 13 2 km. NE Wilhelmina-top, Netherlands New Guinea 3560 m.  
1 in 404 traps. Brought in by collector from same line as specimen taken on Sept. 12.

Sept. 15 2 km. NE Wilhelmina-top, Netherlands New Guinea 3560 m.  
1 in 363 traps. Individual caught in trap set at the base of a limestone cliff where the space between the rock and the grass made a natural runway along its base. There was both grass and brush in the immediate area.

Sept. 16 2 km. NE Wilhelmina-top, Netherlands New Guinea 3560 m.  
1 in 363 traps. Taken in trap set in runway through litter - small grassy patch and <sup>low open</sup> brushy region of the lower forest. (S 20' side of the camp valley.) Sparingly appeared to contain scrubby shrubs and the shady parts of fruit and flowers.



25<sup>th</sup> B. Richardson  
1938

4

## Pogonomys

Sept 18 2 km NE Wilhelmiana type, Netherlands New Guinea 3560 m.

1 in 358 traps. Taken at the edge of the forest where the low brush was mixed with grass patches.

Sept 21 2 km E Mt. Wilhelmiana, Netherlands New Guinea 3800 m.

1 taken by the cook this morning from the wood pile. It had fallen into it sometime during the night and drowned. The region is that of an open alpine forest (tundra kind) with an intergrowth of coarse hard grass.

Sept 24 2 km E Mt. Wilhelmiana, Netherlands New Guinea 3850

1 in 104 traps. Brought in by collector who said it was taken in a runway through the grass in an open sub-alpine forest.

Sept 27 2 km E Mt. Wilhelmiana, Netherlands New Guinea 3800 m

1 in 104 traps. Trap was set in <sup>grassy</sup> runway at the edge of a large boulder. The general region is that of long grass hill slopes with scattered boulders and *Crocosoma* bushes.

Sept 28 2 km E Mt. Wilhelmiana, Netherlands New Guinea.

1 in 101 traps. This individual was taken at an altitude of over 4000 m. from a trap set in a small runway beneath a *Crocosoma* bush. The region was on a very steep hill slope vegetated with short grass, bulbous plants and scattered *Crocosoma* bushes.

Oct 18 9 km NE Lake Habbema, Netherlands New Guinea 2800 m

1 in 425 traps. Taken in trap set <sup>in runway</sup> at the runway base of a tree in a rather brushy region of the mossy forest, that is the undergrowth here was more prominent in adjoining areas.

Oct 19 9 km NE Lake Habbema, Netherlands New Guinea 2800 m

2 in 425 traps. The adult individual



was brought in by collectors. The juvenile specimen was taken in a trap set in running stream litter of the open brushy undergrowth of the mossy forest.

Oct 24 9 km NE Lake Habbema, Netherlands New Guinea 2800m.  
1 in 414 traps. Taken in a small runny through the brushy litter of the more open mossy forest. Moss covered the ground and litter.

Oct 27 9 km NE Lake Habbema, Netherlands New Guinea 2800m.  
1 in 413 traps. Taken along the brushy edge between the sedona forest and the second growth bordering the stream.

Oct 28 9 km NE Lake Habbema, Netherlands New Guinea 2800m.  
1 brought in by natives this afternoon. It had been recently killed indicating it was probably taken somewhere in the immediate vicinity.

Oct 31 9 km NE Lake Habbema, Netherlands New Guinea 2800m.  
1 in 413 traps. Taken in trap set on top of a small log crossing the stream. There was no cover of brushy second growth along the stream side bordering the same forest.

Nov 1 9 km NE Lake Habbema, Netherlands New Guinea 2800m.  
1 brought in by natives. It was still limp and warm so I assume it was taken somewhere in the immediate vicinity.

Nov 2 9 km NE Lake Habbema, Netherlands New Guinea 2800m.  
1 in 197 traps. Brought in by collector.

Nov 8 Bele P., 18 km NE Lake Habbema, Netherlands New Guinea 2200m.  
10 brought in by natives

Nov 11 Bele P., 18 km NE Lake Habbema, Netherlands New Guinea 2200m.  
4 brought in by natives



Pogonomys

- Nov 13 Beli R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m  
8 brought in by natives.
- Nov 16 Beli R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m  
7 Pogonomys brought in by natives.
- Nov 17 Beli R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
10 in by natives.
- Nov 17 Beli R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
11 brought in by natives.
- Nov 20 Beli R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m  
1 brought in by natives.
- Nov 23 Beli R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
8 brought in by natives.
- Nov 24 Beli R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
3 brought in by natives.
- Nov 26 Beli R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
10 brought in by natives.
- Nov 26 Beli R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
4 brought in by natives.
- Nov 27 Beli R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
1 = 4170 in 454 traps. Taken in forested area with open undergrowth of brush, lichen, and a ground cover of leaves. The trap was set in an ill-defined trail over the leafy forest floor.
- Dec 1 Beli R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
1 brought in by natives.
- Dec 2 Beli R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m  
2 brought in by natives.



1928  
1929

Dec 3 Beli R. 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
1 brought in by natives.

Mar. 27 4 km SW Berand Camp, Inderburg R., Netherlands New Guinea 850m.  
1 shot yesterday evening by collecting boys.  
According to their report it was seen in  
the grass near the river bank.

Apr. 19 near Berand Camp, Inderburg R., Netherlands New Guinea 400m  
1 shot this morning by Verstigh. Locality  
on near main track at 850m. camp. Habitat  
primary forest. According to Verstigh's report  
the animal was seen first on the open forest  
floor and then climbed a tree some 20m (?)  
above the floor where it was shot. Stomach  
contained remains of fruit.



25<sup>m</sup>. B. Richardson  
1938

## Pseudochinus

Aug. 4 Lake Habbema, Netherlands New Guinea 3225 m.

Two of this genus were brought in July by a convict who had been cutting trees 200 yds south east of camp (see general account July 25, 1938). The following notes are accumulated observations during the past days captivity and as well as observation made "on the spot".

Climbing: The front feet have three toes opposable to the two middle toes as in the Phalanger but in this case there is a wider grasp as compared to the relative size of the hand. They seem to depend upon the grasp rather than the claws for traction. The hind feet are also well developed for grasping. The thumb is opposable as in Phalanger but as in the front feet this is a broader grasp. Both the hind and front feet are well developed for this grasping type of climbing. It seems to me that such feet are well suited for locomotion in and about low brush thickets with a moss floor. In pushing or trawling through the brush they can reach from one small bush to another. On traveling on or through the moss thickets such wide grasping feet permits a greater quantity of moss to be included in the grasp than the softer or thinner moss will bear their own weight without sinking into the vegetation. Such such sinking would certainly impeded locomotion. The tail is of little use in locomotion it functions only as the animal progresses from limb to limb horizontally here acting as a brace or ballance by resting on or curling loosely about the limb behind. Their activities whatever they be are far more quick, than seems to be a newness to their actions which is taught by Phalanger maculatus.

Abundance: These are the only two that I have seen during my stay here.

Plant associates: These two were taken just beneath the top surface of a moss clump. This clump was about the base of a Litsea which grows from a very open forest on the hill slopes of the region. The



dominant shrub being *Rhododendron* which forms moderately dense growth between and beneath the *Rhododendron* forest. The ground in this region is completely abstracted by a carpet of moss which about the base of the bush and thus builds up into a hummock or clump. It was in the top of such a clump that this animal was found.

Voice: It utters no sound which I have heard. Sometimes when disturbed it squeals.

Gregariousness: At least it is difficult to discern such habits or instincts in caged animals. This I can say that at all times the two caged animals sleep or spend their restful hours curled up side by side. Neither exhibits antagonism towards the presence of the other.

Nests: Four to six inches of moss was placed on the floor of the cage. This the animals pressed and dug into making a cavity near the center large enough to contain their two bodies. The entrance is from the side is about 5 inches in length. No nests are to be found in this nest; the seats being deposited outside in either corner of the box. This would suggest the presence of a "dangerous" in connection with the nest of this animal under normal conditions. This nest and burrow was made during a period of three or four days by pressing themselves into the moss and finally using the front feet to separate the moss in a digging fashion.

Food: *Barronia*, *popaya*, Fruits of *Vaccinium* and *Kaulthema*. The latter round fruit seems to be particularly relished, the fruits and leaves being both eaten. I have seen the animals search through the moss and eat the stony-looking green shoots of *Salvinia* ~~at~~ plants. The process of eating is much the same as with the *Phalangers*. The lower incisors being thrust into the fleshy part of the fruit and then the bringing the upper incisors down thus removing a piece for mastication. On one occasion the large of the



Pseudochirus

There was observed drinking from the receptacle within the cage. Drinking was accomplished by rapidly lapping up the water with the tongue. There was an occasional vigorous sideways shake of the head as if to clear the mouth of water received from getting the head ~~to~~ ~~in~~ into the water.

Whiskerous notes: On seeing a fly when disturbed this animal looks about the floor of the cage for a hole or depression in the ~~more~~ rather than climbing to the top of the cage as would a Phalanger. A ~~very~~ series of cut and forked branches are put within the cage but these are used only during the night when the animal is in search for the food placed a hang from the top of the cage.

The ears of this animal are capable of turning and folding in such a manner as to lie against the head thus preventing particles of moss etc. to enter ear while it grazes among the moss.

They apparently depend upon smell rather than sight for the location of their food and nest hole. This is quite apparent in the day time. Perhaps, <sup>possibly</sup> their sense of sight is better at night.

Their resting position or sleeping position is in a loose <sup>vertical</sup> coil with their head between their legs and their tail wrapped <sup>below</sup> around their feet in a loose coil.

They sit on the basal portion of the tail as does Phalanger.

In descending vertically down a small limb the tail is not used but rather

The food is eaten by grasping it in the front paws and raising it to the mouth. The animal is usually in a hunched position when feeding.

In grooming itself it uses two methods, one is to rapidly scratch itself with its hind feet. It appears as though the dactylos claws are used as a comb. After a brief rapid scratching starts it lifts the claw as if to remove hair etc. from between the claws. The other method is to



run the lower incisors through the fur. This latter type of gnawing I have seen employed only once and here the upper earl stroke through the mesh of the incisors were left in the pulp.

Food: *Dedda berries*, and flowers of *Pododendron*.

The main use of the tail seems to be when the animal releases hold of the branch it is on with the front feet and reaches out for another branch, food, etc. Then the tail anchors to another branch in the rear so as to give an additional grasp <sup>often than</sup> that of the hind feet. The animal does not hesitate about sitting on a small limb eating holding food with the front feet and letting the tail hang down apparently useless except possibly as a balancing organ. Even when walking or clinging to the top of cage the tail is not used prehensile and when it is curled loosely about an object the dislodging of the tail does not seemingly affect the security of the grasp.

The agility of the animal reminds me much of that of a rat. It often jumps from short distances from one to another. It does not hesitate about going down head first, can turn or reverse direction of travel easily; can crawl along top of cage or bottom of small branches, and can go straight up or down a limb with equal agility.

These activities are limited almost entirely to the night time regardless of the artificial light. During day when disturbed they are often semi active for a short period.

Aug 5

I have been watching the nest for some time this evening by lamp light. The most important thing is that the female ate the posterior half of its young and discarded the remainder on the floor. It ate its young with apparent reluctance and grunts after which it cleaned itself, slicking its hands, wiping its face and licking



Pseudochirus

its pouch. It is too bad to lose the specimen but I did not realize the ♀ carried young until this evening.

It is now eating the fruits and flowers of *Bauhinia*. The young can also be seen on its food bit.

Grooming: Licking of its hands and wiping face with same. 15-25% of their time during hours of activity are spent in grooming. The hind feet are employed most of the time in this process with repeated licking of the feet and claws during grooming. About every three seconds of scratching the claws are licked.

Aug 6

Prepared the ♂ as a specimen today. <sup>#4011</sup> The teeth are apparently those of an adult but the testis were very small measuring  $3 \times 2\frac{1}{2}$  mm. The scrotum was not in a long pendulous sack as other marsupials like *Phalanger* but rather in a short sack which did not hang below the feet of the animal.

Large brown eyes with small black pupils.

Large caecum measuring 220 mm.  $\times 17 \times 10$  There are many folds throughout its length.

The half eaten young was preserved in formalin #610

Aug 10 Lake Habbema, Netherlands New Guinea 3225 m.

This morning there were no individuals taken in the 387 traps. It was caught in a rat trap set in a mossy thicket through a very thick brush-shaded mountain canyon slope. The one thing that characterizes this region from other in the bushy thicket where the brush varies from 8' to 12' high and some 125'  $\times$  400' along with sides of a small canyon. About the base of the thicket is a heavy mat of moss which often extends for 3' or 4' upon the brush trunks or stems.

Aug 12 Lake Habbema, Netherlands New Guinea 3225 m

1 in 375 traps. This animal was caught in a mouse trap set at the entrance of a burrow at the base of a tree in the mossy forest. The forest in this region was quite heavy forming a



thick canopy which did not permit a heavy undergrowth of bush. There was practically no undergrowth except for the moss and its associated plants which cling to the trunks and limbs of the forest trees. The burrow was dug in the earth and moss at the base of the small tree. The stomach contained fleshy parts of fruits and flowers.

Aug 14 Lake Habbema, Netherlands New Guinea 3225m.

1 in 375 traps. This individual according to the collector who brought it in was taken <sup>in the</sup> on the top of the ridge which was north from camp. In this region there are large clumps of bushes both tall (10 ft) and short (3 ft) with small inter spaces of moss covered ground. There is also moss about the base of the thickets and ~~over~~ the lower limbs and branches of the bushes. The stomach of the animal contained finely ripened fruits fleshy parts of fruits and what appeared to be flowers (indistinct).

Aug 18 Lake Habbema, Netherlands New Guinea 3225m.

1 in 375 traps. Individual brought in by collector who said it was taken in the forest in the same line of traps and probably in a similar type of habitat as specimen taken Aug 12.

Aug 20 Lake Habbema, Netherlands New Guinea 3225m.

2 in 21 stub traps. These two individuals were taken in a heavy mossy forest in traps set on the moss ground. There were well marked runways above the forest floor and it was in these runways that the traps were set. The forest here is one of heavy light (20-30 ft) rather than a forest proper. The bushy part as it might be called, has a quantity of low limbs and branches near the ground which were clothed in moss. Scattered through this forest were larger trees protruding above the heavy bush.



Pseudochinus

Aug 21 Lake Habbema, Netherlands New Guinea 3225 m.

2 in 387 of 12 stick traps. One ♀ was taken along the brushy ledge above across the big fern comp. Here there is low (4 ft) but thick brush with a moss ground cover clumped up about the base of the brush. The traps were set at the entrance of a large (5 in.) hole entering one of these clumps. Previously I had caught *Stromys* in the same traps. The other a male was taken in the same habitat and locality as those taken Aug 20.

Aug 22 Lake Habbema, Netherlands New Guinea 3225 m.

A skull of an adult animal was brought in yesterday by Rand. According to him it was found on the top of a moss clump with a portion of the skeleton. A similar one was previously found by him. There is no clue as to why or how it got there.

Aug 24 Lake Habbema, Netherlands New Guinea 3225 m.

2 in 384 traps. One was taken by in a net traps set in a small area of brushy forest above the outlet stream. Here there is brush 8-14 ft high with scattered trees and a heavy mossy ground cover. The other was taken in the brushy forest 1 km NNE of camp. The heavy brush 10-14 ft high with scattered trees and a ground cover of moss. This moss not only covers the ground but the bases and limbs or trunks of the brush. The stomachs of both individuals contained vegetable matter which appeared to be the fleshy part of fruits and flowers. The individual with the young had two mammary glands only one of which was functional (giving milk) at this time. The young were detached from the tit when found.

Aug 26 Lake Habbema, Netherlands New Guinea 3225 m.

1 adult ♀ with juvenile in 386 traps. The specimen



was taken in heavy brush bordering the  
mossy forest patch. (1 km. NNE of camp). Here the brush  
was 10-14 ft. high, scattered trees, and scattered  
small patches of low heavily undergrowth. There was a  
mossy ground cover. Only one of the two tits  
was functional.

Aug 28 Lake Habbema, Netherlands New Guinea, 3225m.

1 in 384 traps. Taken in the heavy brush  
ridge border of the mossy forest patch situated  
1 km. NNE of camp. Here there was a high stand  
of brush (10-14 ft.) open enough to show a heavy  
ground cover of moss and scattered small bush  
clumps. The moss was clumped up about  
the bases of bushes and it was not an intrusion  
to hole (5-6" in diameter) that the trap was set  
which caught the insect.

This heavy brush seems to be the  
preferred type of habitat when there is  
an undergrowth of scattered small bushes and  
a ground cover of moss which covers logs,  
bases of bushes and is even in clumps on the  
limbs of the brush itself.

Sept 3 Lake Habbema, Netherlands New Guinea, 3225m.

1 in 9 stable traps. Taken in traps set at the  
approach of an arboreal runway. This route is  
apparently used by another larger mammal  
for there is a pile of dung (4" x 2") below. This  
larger mammal is as yet unknown to  
me. The region is the heavy high brush  
land bordering the mossy forest 1 km. NNE  
of camp. The arboreal runway is the only  
peculiar thing about the locality. It is  
a horizontal branch 3" in width and about  
10' ft long bridging a narrow canyon. The  
claw marks, the dung pile, and the dung  
indicate that it has been used frequently.



Pseudochirus

Sept 13 2 km. N. Mt. Williwina-top, Netherlands New Guinea 3560m.

1 in 20 stake traps. The trap was set in a small runway through the open grass patch between two clumps of sub-alpine forest. The space between the clumps was only about 10 ft wide and rather well protected by uneven ground and small scattered bushes. These mammals are quite apparently as common here as at Habbema, for though I have spent considerable time looking for their signs up to date I have not found any where as about Habbema it was quite common on moss covered banks or elevated moss clumps. The stomach contained finely ground remains of what appeared to be shrubby parts of fruit and stems. The gizzard contained the bladder was much enlarged appearing as if severely functionally. (reason)...

Sept 17 2 km. N. Mt. Williwina-top, Netherlands New Guinea 3560m.

1 in 20 stake traps. Taken in the same trap set in the same place as the individual taken on Sept 13, 1938.

Sept 28 2 km. C. Mt. Williwina, Netherlands New Guinea 3800m.

1 in 181 traps. Individual taken in runway skirting the sub-alpine forest where it borders the tall grass hill slope. The forest is situated in the narrow band beneath or rather at the base of a limestone cliff.

Oct 24 2 km. N. E. Lake Habbema, Netherlands New Guinea 2800m.

1 in 414 traps. Taken in traps set in many fallen logs. The general region was that of mossy forest on the <sup>upper</sup> edge of a stream bank. There are numerous fallen trees and much litter. Also patches of brush in the open spots. The owl nest from which skulls were taken seems to indicate that this animal was at one time more common here than at present. I have



some signs (droppings) along arboreal runways but the traps up to date have yielded only 1 from heavy regardless of the ~~many~~ number of apparently good sets.

Oct 24 9 km N of Lake Habbema, Netherlands New Guinea 2800 m.

1 in 409 traps. Brought in by collector who said it was taken in <sup>from many other traps</sup> trap set <sup>in</sup> fallen log. Most of the logs and litter on moss covered, some appearing trampled down by continual passage of feet. It was in such a trampled mossy runway that the trap was set.

Nov 1 9 km N of Lake Habbema, Netherlands New Guinea 2800 m.

3: 2 Brought in by natives probably from below 2300 meters or so. 1 taken in trap set on mossy log along the undergrowth of the mossy forest. Mammae indicated that it had young. It is probably fled when the parent becomes cold.

Nov 5 9 km N of Lake Habbema, Netherlands New Guinea 2800 m.

1 brought in by a native. Probably taken some distance below camp.

Nov 10 Bule P., 18 km N of Lake Habbema, Netherlands New Guinea 2200 m.

1 in 308 traps. Specimen taken according to collecting log in trap set in heavy forest on the steep stream slope.

Nov 13 Bule P., 18 km N of Lake Habbema, Netherlands New Guinea 2200 m.

1 brought in by native.

Nov 15 Bule P., 18 km N of Lake Habbema, Netherlands New Guinea 2200 m.

5 brought in by natives. The juv. #5612 was in the pouch of its mother #5610. It was not clinging on to the tip. There was only 1 of the 4 tits functional.



Pseudochirus

- Nov 18 Beh R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
2 brought in by natives.
- Nov 19 Beh R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
3 brought in by natives.
- Nov 20 Beh R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
6 brought in by natives.
- Nov 22 Beh R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
6 brought in by natives. The large silver  
dark striped species exhibits something heretofore  
unnoticed by me and that is an oil patch  
between the front legs and slightly forward.  
It was particularly apparent in the ♂ individual,  
the hair in this case being curly and giving  
an oiled or matted look to the hair. The female  
oil area was not so apparent, that is the  
hair was not curled down with the secretion  
but it was readily recognizable on  
parting the hair and examining the bases.
- Nov 23 Beh R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
1 brought in by natives.
- Nov 23 Beh R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
8 brought in by natives. There were 2 individuals  
with young in the period. 2 each case the juvenile  
follows the ad. ♀ in the categories.
- Nov 24 Beh R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
2 brought in by natives.
- Nov 27 Beh R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
4 brought in by natives. 2 ♀ with their  
young.
- Nov 28 Beh R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
4 brought in by natives. 2 ♀ with their young.



Nov. 29 Bela R., 18 km N Lake Habbema, Netherlands New Guinea. 2200 m.  
6 brought in by natives

Nov. 30 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
1 brought in by natives.

Dec 2 Bela R. 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
2 c & ♀ with yong. brought in by natives.

Dec 3 Bela R. 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
2 brought in by natives.

Jan 10 15 km SW Bernhard Camp, Denby R., Netherlands New Guinea 1800 m.  
1 adult ♀ taken yesterday evening by a soldier.  
The beast was climbing about the ridges of the  
store tent. See photos. The pelt is very poor,  
many loose hairs and a condition of the skin  
which resembles mange.

1 adult ♀ and juvenile ♂ shot by collector.  
Jan 11 According to his story it was shot while  
climbing up a large tree in the mangrove forest.  
It reached a height of some 30 ft before being brought  
down with gun. Stomach contained remains of  
nutrients which appeared to be fruit.

Jan 12 1 adult ♂ shot by Bonds collecting log. According  
to him it was climbing along a log a few feet off the  
ground. The stomach contained remains of  
what appeared to be finely masticated fruits.

Feb 3 18 km SW Bernhard Camp, Denby R., Netherlands New Guinea <sup>2150 m.</sup> ~~1900 m.~~  
1 shot by Dursling. According to his  
report it was climbing up a small tree some  
2 meters off the ground. Apparently this  
species moves about during the day for  
these specimens have been taken, each in  
the morning while they were crawling about  
the second story vegetation.

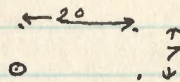
Mar 21 4 km SW Bernhard Camp Denby R., Netherlands New Guinea 850 m.  
1 shot yesterday evening by myself.



Pseudochinus

It was seen in one of the small second growth trees at near the river edge of the flood plain. It was within a small hole some 15 ft above the ground. The tree was small stem broken and open poles. For a distance of some 11 ft up the trunk was latched with vines and enlarged upon. Below the tree was heavy undergrowth. The animal made no attempt to escape but remained motionless on the limb. The young in in alcohol.

The pouch <sup>opening</sup> is U shaped 20 mm deep and 12 mm across base of U. Position of pouch to vagina 58 mm. Measurement of pouch 50 long by 60 wide. From base of U to position of U which young was attached 30 mm.



Stomach contains remains of fruit only.

Mar. 29 4 km SW Bernhard Camp Idenburg R., Netherlands New Guinea 850m.

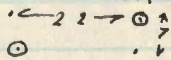
♂ (2 juv.) shot yesterday evening by collecting bag. He said he shot it from a fruiting Eugenia tree, a common tree of the flood plains. The pouch contained 2 young (see alcoholics).

Pouch opening is 13 deep x 10 across base (head).

Position of pouch to vagina 62

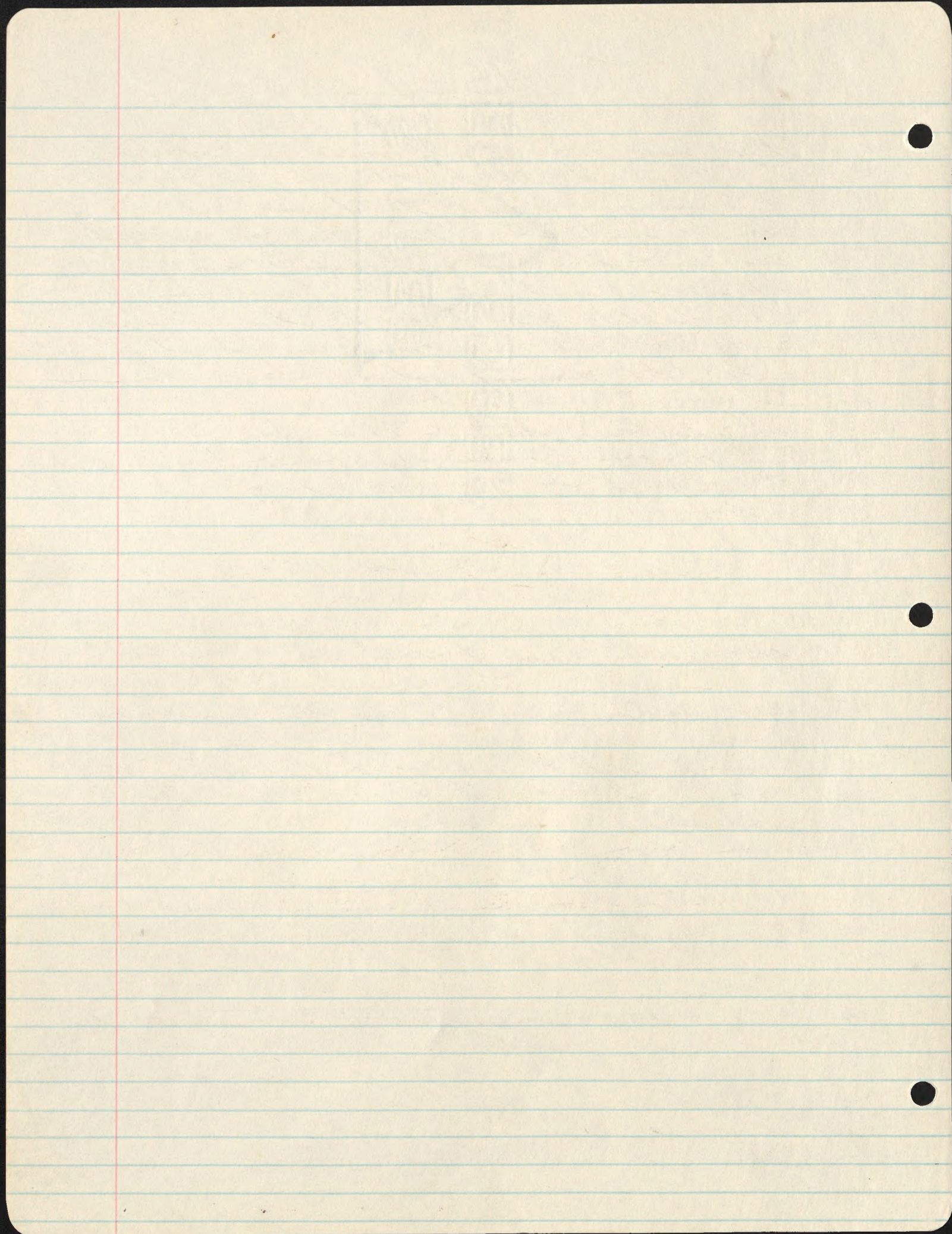
Dimension of pouch 58 long x 50 wide.

From anterior base of pouch to anterior tip was 24 mm.



Apr. 2 <sup>th</sup> ~~It was brought in by myself. Shot yesterday~~ 1 shot yesterday evening. It was seen crawling through the undergrowth, some 4 ft above the ground, in the forest of the flood plain. Eyes had a dull red skin. Stomach contained remains of fruit.







Wm. S. Richardson  
1938

## Pseudohydromyza

Aug 8 Lake Habbema, Netherlands New Guinea 3225 m.  
1 individual in 388 trays. This individual was brought in by one of my collectors from the line of trays about the north bay shore. I shall find at the next tray in which it was caught tomorrow. The tarsi were long, as preserved specimens and the teeth were showing that this small insect is an adult male. It lacks the webbed tarsi, and the numerous tubercles of *Hydromyza*. The stomach contained what appears to be vegetable matter (see dissection material).

Aug. 9 Today the collector showed me the exact trap in which the above was caught. The trap was set in a small run way some 3 ft from the water's edge and over a steep  $1\frac{1}{2}$  ft. masonry bank. The general region was that of low *Podocarpus* & bushes with moss covering the ground and clumping up about the bushes. It was from one to another of these moss clumps that the trail led.

Sept 8 2 km N.W. Wilhelmsburg, Irian, Netherlands New Guinea 3600 m.  
1 in 187 trays. The trap was set at the base of the limestone cliff. Here the vegetation was separated several inches from the wall leaving a natural runway in a relatively well sheltered <sup>get most of</sup> region. In this particular spot the ground was quite moist and covered with *Polypodium* and moss. In the immediate vicinity there was a rather open growth of moss, but which permitted scattered *Adiantum* patches of grass.

Sept 11 2 km N.W. Wilhelmsburg, Irian, Netherlands New Guinea 3560 m.  
1 in 404 trays. Another adult ♂ taken in the same trap in the same spot as the individual taken on Sept 8.

Sept 14 2 km N.W. Wilhelmsburg, Irian, Netherlands New Guinea 3560 m.  
1 in 404 trays. Brought in by collectors who said that it was taken in grass bordering the brushy hill slopes. Stomach contained animal matter. There was no sign of sexual activity, return small.



Jan 14 15 km SW Bulbul Camp, Idenburg R., Netherlands New Guinea 1800m.

3 in 425 traps. Specimen taken on open or moderately open <sup>moor</sup> forest floor. The vegetation is that characteristic of the moor forest in this vicinity, scattered large trees, moderate <sup>patched</sup> growth of grass and undergrowth. This genus has been taken in this camp previously to this date and catalogued with genus accounts as *Melomys*. For previous and more complete notes on habitat of this genus see the accounts under *Melomys* as "small gray species".

Jan 16 1 in 420 traps. Brought in by collector.

Jan 17 2 in 419 traps. Taken in moor forest floor near litter heaps and undergrowth.

Jan 19 1 in 421 traps. Brought in by natives.

Jan 20 2 in 421 traps. One was taken at the edge of a litter heap and the other at the base of a large tree. In each case the trap was set in a small runway and baited with dry fish. I examined the stomach contents of both these individuals. Each contained what appeared to be insect remains as well as short segments of arched worms. Vegetable matter seemed to be lacking except for small bits which I assumed were eaten along with the insects.

Jan 21 1 in 421 traps. Brought in by collector. Stomach contained remains of insects, animalcules, and possibly other small invertebrates.

Jan 22 1 in 28 stub traps. Brought in by collector.

Jan 23 1 in 421 traps. Taken beneath log in the litter of the moor forest.

Jan 25 1 in 420 traps. Taken in runway leading from a burrow in the moss at the base of a large standing tree. Burrows such as this are not uncommon about the moss which covers the upper roots (would be aerial roots) of many of the trees.

Jan 26 4 in 419 traps. Taken in a moss covered litter such as logs, etc. Seen to prefer a moist protected (shaded) runway over the moss.

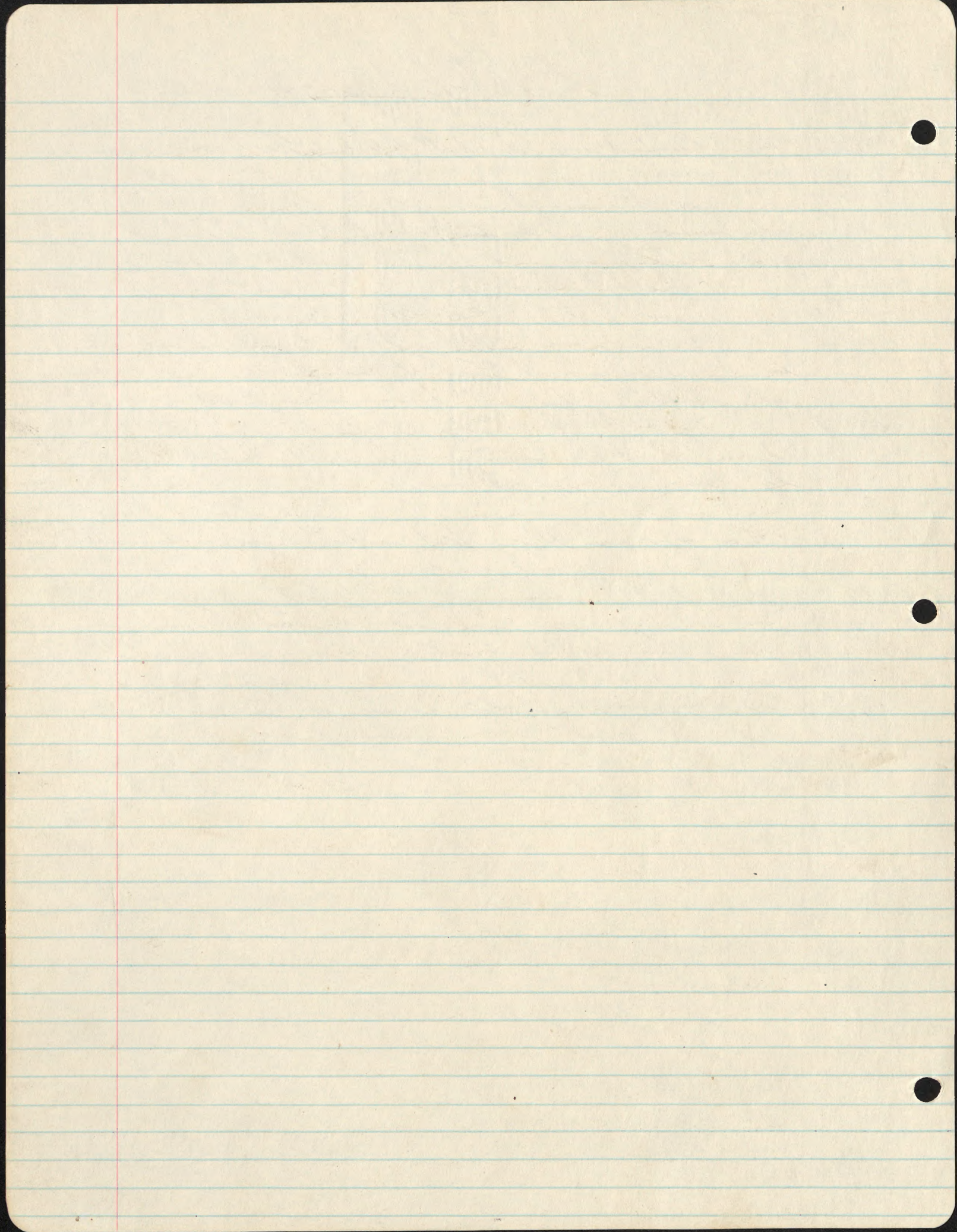
Jan 29 1 in 218 traps. Brought in by collector.



Pseudohydromys

- Feb 4 18 Km. SW Bernhard Camp Denburg R. Netherlands New Guinea 2150m.  
1 in 415 traps. Taken in trap set in small  
runway at the <sup>south</sup> edge of a bog on the forest floor. This  
floor was mossy and partially covered by the leaf litter of  
bamboo. There was a heavy undergrowth of bamboo,  
scattered secondary trees in a mossy forest.
- Feb. 5 1 in 411 traps. Brought in by collector
- Feb 6 2 in 411 traps. One brought in by collector, the other  
taken in runway over the forest floor at the bordering  
litter. Habitat Mossy forest with bamboo undergrowth.
- Feb. 7 1 in 411 traps. Taken in habitat consisting  
of mossy forest with bamboo undergrowth. Brought in  
by collector.
- Feb 8 3 in 411 traps. Taken in runway set in a near  
littered area in Mossy forest with bamboo undergrowth.
- Mar. 16 4 Km. SW Bernhard Camp Denburg R. Netherlands New Guinea 850m.  
1 in 155 more traps. Taken in trap set in  
obscure runway. Habitat moist hill slope with leaf and litter,  
patchy undergrowth, thick secondary, scattered large trees.  
The area was on a slope of one of the low ridges  
above the flood plain. (Upstream from camp). Judging  
from skull, skeleton & teeth I believe this host is  
sub adult. Stomach contained fruit remains and few  
insect remains.







Wm B. Richardson  
1938  
1939

## Pteropus

July 9 Hollandia, Netherlands New Guinea <sup>as land.</sup>  
Yesterday evening while hunting through the jungle with flash light I found a single fruit tree in which bats were feeding. Such trees containing bats are easily located within the jungle by the intermittent loud squeaks, and the falling of their scintillating mizzles. There were 5 or more individuals in the tree of which I obtained four specimens. Their eyes are easy to shine at night, giving faintly a pale orange yellow light. The bats when seen were hanging suspended by their feet in the peripheral foliage apparently feeding in this position.

July 12 4 km. SW Tabati, Netherlands New Guinea  
Four of this genus were brought in today for Mr. Burkman. It lives two kilometers inland from Pin on the road to Sentani. According to the natives description they were shot in the evening while feeding in a man hypoch (sp?) plantation. Two Dobsonia were also brought in at the same time by the same boys.

Apr. 1 4 km SW Bunkand Camp Idenburg R. Netherlands New Guinea 850 m.  
1 shot yesterday evening by collecting boy. According the was this of this bat feeding in a tall tree.

Apr. 12 Bunkand Camp Idenburg R. Netherlands New Guinea 50 75 m.  
1 shot yesterday by Road. According to him it was hanging solitary in a tree.

Apr. 27 18 shot yesterday afternoon. They were hanging up in the succord growth trees at the head of the lagoon. There were seen 30 and 40 individuals in the colony when first seen but when shot at they broke up into smaller



groups lighting on trees some 200 to 500 yd  
distant. They seemed to stay in the  
second growth trees bordering this  
portion of the lagoon. <sup>Some</sup> they with  
space light green plum which made  
the individuals at rest plainly visible.  
When coming within 100 ft. of them  
they would take to wing circling  
about once or twice and coming to  
rest some 200 or more yds distant.  
When undisturbed they remained hanging  
and occasionally <sup>flapping</sup> flapping of the wings  
as if to cool themselves. They were  
not clumped together but rather  
singly a distance of 4 inches or more  
from nearest neighbor. Mr. Horn  
who showed me this colony reports  
that this morning there were between  
100 and 200 individuals. He obtained 4 as food  
# for his Drakes.

May 3 Bernhard Camp, Dierling R., Netherlands New Guinea 50 m.

7 shot. They were hanging in the  
corn breaks bordering the Dierling River.  
They were hanging singly, with the  
exception of one ♂ and ♀, three to 5 feet  
above the water. They were not hanging  
in the dense thicket but rather in  
the thinner parts where they were  
readily visible from the ~~shore~~ river.  
They made no attempt to fly when  
approached within 20 ft.



25<sup>th</sup> B. Belandem  
1938

## Rattus

June 21 Hollandia, Netherlands New Guinea

A single male ~~rat~~ animal was brought in this late afternoon by one of the Dyaks. He had caught it in or near the lush grass which grows about an godown. This grass is common in the lowland, uninhabited sections of Hollandia.

June 23 Hollandia, Netherlands New Guinea

Yesterday evening 8 of this genus were brought to me by people from Cuyatulu. They had caught them in their camp on the small island of the same name. This island is located at the mouth of Hollandia Bay about 1 mile east of Hollandia itself. Price paid was 5¢ for a young and 10¢ for an adult.

This evening three more young were brought in by boys from the same island. They were purchased for 15¢.

June 24 Hollandia, Netherlands New Guinea

Seven Rattus rats were brought in by a Sentini Pigeon. He had caught them in the house of his camp "Dase" on the lake. They were purchased for 40¢.

Caught another of a different species in the 591 traps. It was taken in the main forest north east of Hollandia.

June 25 Hollandia, Netherlands New Guinea

Two young of this species were brought in to me this evening by one of our Mellesian coolies. It was caught in the vicinity of the <sup>one</sup> godown at the water front here in Hollandia. They were taken near the same spot that the June 21 animal was taken.

June 26 Hollandia, Netherlands New Guinea

While at Tebat this morning one of the boys spotted rat and all of the youngsters were in the shallow water below the village after the animal,



When I saw the beast it was vainly attempting to escape by swimming. After several captures and subsequent it was secured by a string and I purchased the animal for .10¢

June 27 Hollandia, Netherlands New Guinea.

One individual was brought in this afternoon by a native from Tolate. According to his story he caught it about the house in his campory.

June 28 Hollandia, Netherlands New Guinea.

One of the Dyak coolies brought in one individual last evening. Apparently he had caught it in or near their living quarters back of the godown.

June 29 Hollandia, Netherlands New Guinea.

One individual was brought in by a Malay collector who said he had caught it in one of his 25 traps set in the jungle. He assured me that it was caught in the jungle. It is the same sp. we have been catching about Hollandia lowlands. One of a different species was brought in by the Papuan collectors. They were taken in their 100 traps which they have set <sup>night</sup> in the rain forest 1 kilometer north east of Hollandia.

June 30 Hollandia, Netherlands New Guinea

A juvenile was caught in one of the three traps I gave to the Mekassar coolies to set in or near their room. This room is an old godown near the river and surrounded by a dense green vegetation.

July 3 Hollandia, Netherlands New Guinea

One individual caught in 443 traps. It was taken by the Papuan collectors. They have caught all of this species of Rethin in their 100 traps set in the jungle north of Hollandia.



Rattus

July 4 Hollandia, Netherlands New Guinea

Purchased (104) a juvenile of the genus from one of the local Papuans. According to his story he caught it here in Hollandia.

July 7 Hollandia, Netherlands New Guinea

My Papuan collector brought in another individual from those traps set in the jungle north of Hollandia.

Purchased (104) another local Papuan. He came in carrying the live individual by the tail so I know that it was taken in the immediate vicinity.

July 9 Hollandia, Netherlands New Guinea

Papuan collectors again come in with another individual of the same sp. as brought in on July 7 etc.

July 10 Hollandia, Netherlands New Guinea

Papuan collectors brought in another rat, from this jungle set north, <sup>north</sup> east of Hollandia.

July 12 Hollandia, Netherlands New Guinea

Two of the genus today. The smaller one purchased yesterday evening from a local papuan. The other was taken by my Papuan collector in the jungle north northeast of Hollandia.

July 16 Hollandia, Netherlands New Guinea

Two juveniles were brought in from Tabeti.

Aug. 2 Lake Habbema, Netherlands New Guinea 3225 m.

Five individuals were taken today in the 372 traps. 4 from the grassy stream side of the grassy valley north east of camp and the other along the tall open grassy border of the lake. These animals were taken in traps set in running through the grass. They differ from the larger *Stomoxys* runway in that they



are more directed and less maze-like. The stomach contained grass and other green vegetable matter rather than the fruit of the Strombos stomach. One individual had a number of parasitic round worms in the stomach. This is preserved by Dr. Traubson. There were no embryos in the 24 opened today.

Aug 3 Lake Habbema, Netherlands New Guinea 3225 m.  
3 individuals in 394 traps. The one individual which I took from the trap was caught in a rather small runway ~~was~~ through the high grass near the water edge.

Aug 4 Lake Habbema, Netherlands New Guinea 3225 m.  
1 individual in 394 traps. This specimen was taken from ~~the~~ along the stream side where a heavy grass is to be found in the valley south east of Camp.

Aug 5 Lake Habbema, Netherlands New Guinea 3225 m.  
1 individual in 394 traps. This individual was taken in a trap set in the high dense grass immediately bordering the western edge of the bog. Through the dense grass border there is numerous runways of rather a large size. The region is within 100 yds of the nearest bush or trees, the surrounding country being grass and reeds in a <sup>semi</sup> swampy valley.

Aug 7 Lake Habbema, Netherlands New Guinea 3225 m.  
1 individuals were taken in the 388 traps. It was taken in a distinct trail through the <sup>heavy</sup> grass which borders the small stream in the grassy valley. Here there were low <sup>scattered</sup> bushes which were barely higher than the grass.

Aug 9 Lake Habbema, Netherlands New Guinea 3225  
1 individual in 388 traps. It was taken in the heavy grass border of the lake. There was a small well defined trail in which the trap was set. A short



Wm B. Richardson  
1936

3

## Rattus

distance away was a rododendron thicket with  
moss linged about its base.

Aug 10 Lake Habbema, Netherlands New Guinea 3225m.

2 in 387 traps. These two were caught in  
the grassy thicket bordering the lake shore.

This evening I saw one of these beasts  
alive. It trambled in a semi hopping fashion  
rather than the running gait of Rattus.

Aug 11 Lake Habbema, Netherlands New Guinea 3225m.

1 in 387 traps. The animal was taken in the  
heavy grass border of the lake. Here there are numerous  
runways through the grass.

Aug 12 Lake Habbema, Netherlands New Guinea 3225m.

1 in 375 traps. The animal was taken in a trap  
set in an ill defined runway through the tall  
thin grass bordering the heavy grass and reeds of  
the lake shore.

Aug 13 Lake Habbema, Netherlands New Guinea 3225m.

1 in 375 traps. It was brought in by my collector  
as I do not know when it was taken.

Aug 15 Lake Habbema, Netherlands New Guinea 3225m.

3 in 375 traps. Two were taken in the heavy  
grass bordering the lake shore the other in  
the heavy grass near the tree fern thicket  
west of the bay. There is one thing  
constant in their habitat preference and  
that is heavy grass near or bordering  
a moist region.

Aug 18 Lake Habbema, Netherlands New Guinea 3225m.

1 in 375 traps. Brought in by collector  
who said it was taken in the heavy  
grass bordering the outlet stream of  
the lake.



Aug 21 Lake Habbema, Netherlands New Guinea 3225 m.  
2 in 387 traps. One was taken along the  
heavy grass bordering the outlet stream of the  
lake, the seemingly usual type of habitat  
of the species. The other was taken up  
on a heavy low bushy ridge. Here there  
was a rather dry conditions although the  
still penetrated a ground cover of moss.  
There was also scattered grass through the  
bush.

Aug 25 Lake Habbema, Netherlands New Guinea 3225 m.  
1 in 384 traps. Brought in by collectors  
from lake outlet margin or <sup>in a bushy</sup> forest above outlet  
stream.

Aug 26 Lake Habbema, Netherlands New Guinea 3225 m.  
1 in 384 traps. Brought in by collectors.

Sept 8 7 km N E Wilhelmina Top, Netherlands New Guinea 3560 m.  
1 in 387 traps. Brought in by  
collectors. Probably taken in the heavy grass  
bordering the camp valley stream.

Sept 11 7 km N E Wilhelmina-top Netherlands New Guinea 3560 m.  
1 in 404 traps. The individual was taken in  
in the forest beneath a tangle of mossy logs.  
It seem to me that this is rather a queer  
place to find such a host, away from  
what one seemingly its normal haunts of grass  
thickets. However there was such a thicket within  
15 ft of the trap, and within 2 ft of the trap  
there was a thin small patch of sedge.

Sept 12 7 km N E Wilhelmina-top Netherlands New Guinea 3560 m.  
One individual was caught after having been roared at  
from its nest. The nest was situated near the center  
of the camp valley in a rather mossy wet short  
grassy region. At the nest there was a rhododendron  
hummock about 5 ft across and 2 ft high. It was on this



Rattus

mass of stalling branches and decaying plant matter that the nests (2) and burrows were constructed. There was a mass of mounds though the burrow with 4 or more exits. Two of the nests were apparently in use at present, but the third was a decaying mass which was no longer in use. The two new ones consisted of a mass of shredded grass material crumpled into a cavity about 10 inches in diameter. There was no apparent entrance or exit to the nest but rather a ball of grass etc into which the rat could crawl into from any angle. The nests were free of dung and showed signs of being the grass being continually added for that on the outside was moist and also looking (muddy) than that of the center of the nest. I had an opportunity to see the rat in motion and to my surprise it did not use the a flexing gait as the long hind feet would indicate but rather a running gait was used to evade me; it was not unlike that of *Rattus*.

Sept 15. 2km NE Wilhelmia tops, Netherlands New Guinea 3560m.  
1 in 363 traps. Brought in by collector.

Sept 17. 2km NE Wilhelmia tops, Netherlands New Guinea 3560m  
2 in 358 traps. One was brought in by the collector the other was taken in a small runway through thick grass about a scrubby pond in the camp valley. The entire region is grass with a particularly heavy growth of hard grass that borders the pond. It was in this heavy grass border (5-10" thick) that the animal was taken.

Sept 21 2km E Mt Wilhelmia Netherlands New Guinea 3800 & 4050m  
3 in 104 traps. These three individuals were all taken in more or less a similar type of habitat, that is on the heavy grass hill slope where there were scattered protruding rocks and Coprosma bushes.



It is my belief that these animals are to be found on the grassy hill slopes up to 4250m and possibly higher.

Sept 22 2 km E Mt. Wilhelmira, Netherlands New Guinea 3800-4050m.  
3 in 104 traps. These individuals existing according to the collector who brought them in were taken in the heavy grass of the mountain slope. Probably ~~in~~ <sup>in</sup> much the same habitat as those taken yesterday (Sept 21.)

Sept 23 2 km E Mt. Wilhelmira, Netherlands New Guinea  
3 in 104 traps. They were taken in the heavy grassy cover with scattered bushes and boulders. The traps for the most part have been set near boulders or bushes for here & runways are more clearly visible and better defined. This does not indicate however that the rodent does not inhabit the solid grassy gaps. There are trails; none of them leading through the grass. They might be considered as a maze of trails rather than any one well defined trail.

Sept 24 2 km E Mt. Wilhelmira, Netherlands New Guinea 3800m.  
2 in 104 traps. Taken <sup>in</sup> ~~in~~ <sup>runways through</sup> the tall grass covering an old talus slope with scattered bushes and exposed boulders.

Sept 25 2 km E Mt. Wilhelmira, Netherlands New Guinea 4000ft.  
1 in 104 traps. Taken at the base of a rocky cliff at the edge of a solid talus slope which has become completely vegetated with a tall grass.

Sept 26 2 km E Mt. Wilhelmira, Netherlands New Guinea.  
2 in 104 traps. Brought in by collector. The adult ♂ was said to have been taken ~~in~~ <sup>in</sup> the heavy tall grass covering an old talus slope.



Rattus

- Sept 27 2 km E Mt. Wilhelm, Netherlands New Guinea 3900 m.  
4 in 104 traps. One dead. Individuals were taken in the tall grass on hill slope on at the edge of scrub grassy area where they border the open sub-alpine forest.
- Nov. 1 9 km NE Lake Habbema, Netherlands New Guinea 2800 m.  
3 brought in by natives today. The rats were probably taken near their village elev 2300 m ±.
- Nov 3 9 km NE Lake Habbema, Netherlands New Guinea 2800 m.  
19 brought in by natives. They were probably taken near the small native settlements about 2300 m.
- Nov 6 Bela R., 18 km NE Lake Habbema, Netherlands New Guinea 2200 m.  
7 brought in by natives.
- Nov 7 Bela R., 18 km NE Lake Habbema, Netherlands New Guinea 2200 m.  
2 brought in by natives.
- Nov 8 Bela R., 18 km NE Lake Habbema, Netherlands New Guinea, 2200 m.  
9: 1 in 218 traps, 8 brought in by natives. The one from traps, <sup>\*5394</sup> was set in a runway through the tall grass of ~~the~~ an old garden clearing. There was also secondary growth trees in the immediate area.
- Nov 9 Bela R., 18 km NE Lake Habbema, Netherlands New Guinea, 2200 m.  
26 brought in by natives.
- Nov 10 Bela R., 18 km NE Lake Habbema, Netherlands New Guinea 2200 m.  
8 brought in by natives.
- Nov 11 Bela R., 18 km NE Lake Habbema, Netherlands New Guinea 2200 m.  
12 brought in by natives.
- Nov 12 Bela R., 18 km NE Lake Habbema, Netherlands New Guinea 2200 m.  
5 brought in by natives.



Nov 13 Bela R. 18 km N Lake Habbema, Netherlands New Guinea, 2200 m.  
25 brought in by natives.

Nov 15 Bela R. 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
1 brought in by natives.

Nov 18 Bela R. 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
59 brought in by natives.

Nov 19 Bela R. 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
1 taken in 416 traps. In runway through grassy  
spot in second growth garden clearing.

Dec 9 Balim R. Netherlands New Guinea 1600 m.  
1 found by Basso dead in a small  
narrow track about  $\frac{1}{2}$  mile down the river and  
on the <sup>right</sup> slopes of the east bank of the river, in  
an old garden clearing.

Dec 10 Balim R. Netherlands New Guinea 1600 m.  
1 in 199 traps. Taken in - small runway  
through the third grass which had the a small  
wash.

Dec 11 Balim R. Netherlands New Guinea 1600 m.  
2 in 384 <sup>abandoned</sup> traps. Taken by collectors in traps  
set in an about garden land or neighboring wash.

Dec 12 Balim R. Netherlands New Guinea 1600 m.  
1 in 380 traps. Brought in by collectors as on Dec 11  
from same trap line.

Dec 13 Balim R. Netherlands New Guinea 1600 m  
25: 2 in 380 traps. # 7177 brought in by collector  
# 7175 taken in a grassy thicket bordering a ditch at the  
edge of an abandoned garden. 23 were brought in  
by natives.

Dec 14 Balim R. Netherlands New Guinea 1600 m.  
9 brought in by natives.



W.B. Richardson  
1938  
1939

6

## Rattus

- Dec 15 Balin R., Netherlands New Guinea 1600 m.  
12: 9 brought in by natives, 3 in 370 traps.  
Habitat is that of the grassland which occurs in the abandoned gardens, old cast over areas.
- Dec 16 Balin R., Netherlands New Guinea 1600 m.  
2 in 359 traps. Brought in by collector.
- Dec 19 Balin R., Netherlands New Guinea 1600 m.  
3 in 357 traps. Brought in by collectors.
- Feb. 16 6 Km. SW Bernard Camp Idubung River, Netherlands New Guinea 1200 m.  
1 in 223 traps. Taken in runway through moist clayey soil bordering a streamside. The clayey soil was quite open and rather a heavy canopy of fruit trees. Stomach contained remains of fruits and insects. The latter resembled etc.
- Feb. 17 1 in 223 rat traps. Brought in by collector.  
8 mammary glands not yet lactating. 2 emb.
- Feb. 23 1 in 221 traps. One brought in by collector.  
The other ♀ was taken in an obscure runway on the moist forest floor through the stream side undergrowth. Heavy dense <sup>low</sup> undergrowth and complete canopy of fruit trees. The female taken had 6 mammary which in consistency it made found a specimen collected Feb. 17.
- Mar. 4 1 found dead near camp stream. Brought in by one of Herb's boys.
- Apr. 2 4 Km. SW Bernard Camp Idubung R., Netherlands New Guinea 850 m.  
1 in 2075 rat traps. Taken in trap set in runway bordering debris thicket at the edge of the stream. The debris consisted of fallen trees as well as <sup>stems</sup> washed in during high water.  
8 mammae; non lactating. No emb. Stomach contains ~~of~~ remains of some undetermined woody substance.
- Apr. 3 1 in 205 rat traps. Brought in by collector.  
Taken along bushy river bank. No emb.



Stomach contains remains of fruit, what appeared  
to be fungus, and a few insects.

May 7 Newland Camp, Darling R., Atherton Mts, Guinea 5075m.  
1 in 27 stool types. Brought in by collector.  
Taken on lower mountain slope, above Glad plain.  
Stomach contained remains of vegetable material,  
fruit, grass?, etc.



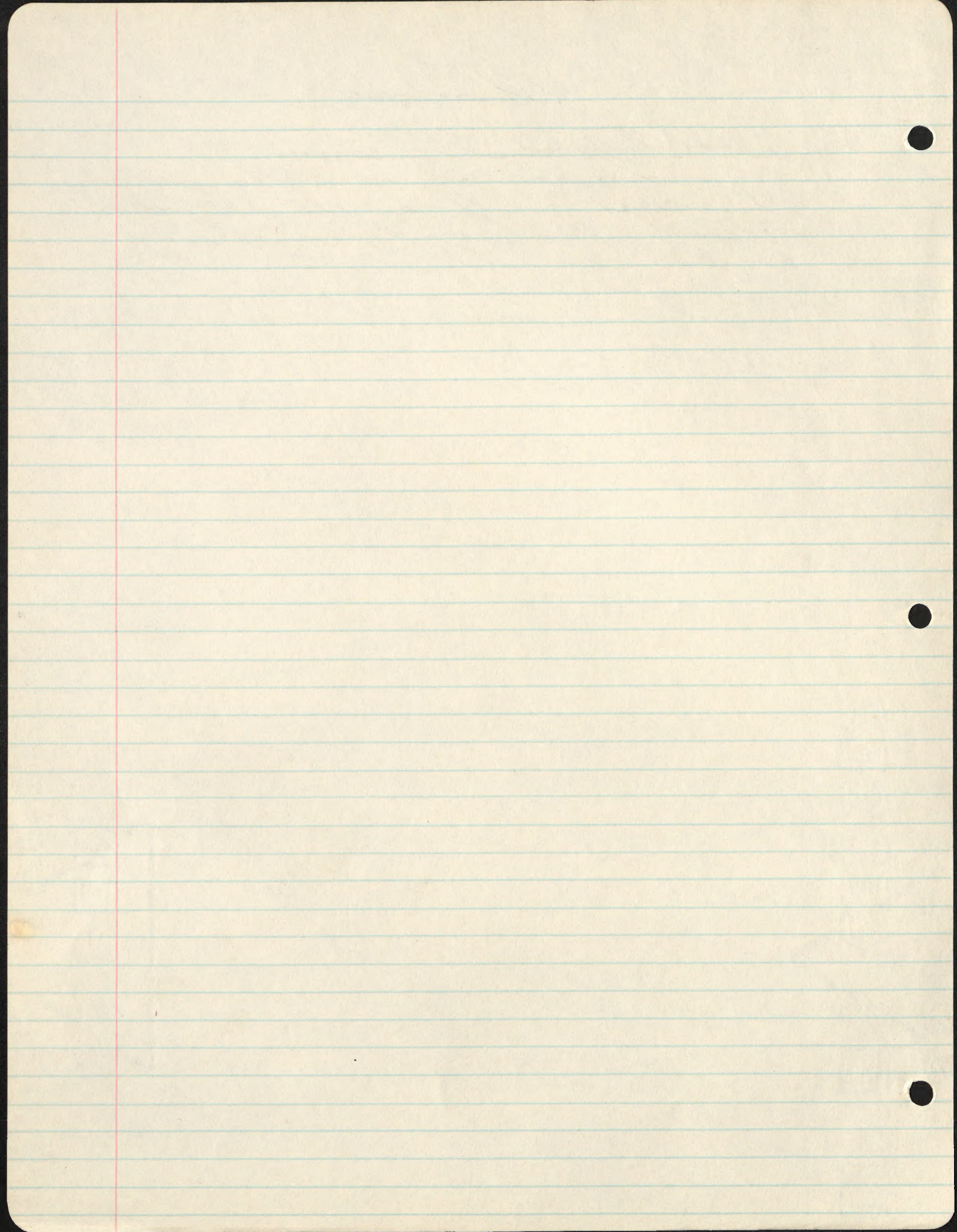
25<sup>th</sup> B. Richardson  
1938.

Rhinolophus

July 15 Hollandia, Netherlands New Guinea.

Three specimens were taken yesterday  
2 by myself in the cave in the S.W. Hollandia  
and the other by my Papuan collectors.  
The latter was taken at the mouth of  
the cave during its evening exit.  
(See notes of Myotis for they were found  
at the same place.)







Wm B. Picotard  
1938  
1939

## Rhinonycteris

July 13 Hollandia, Netherlands New Guinea

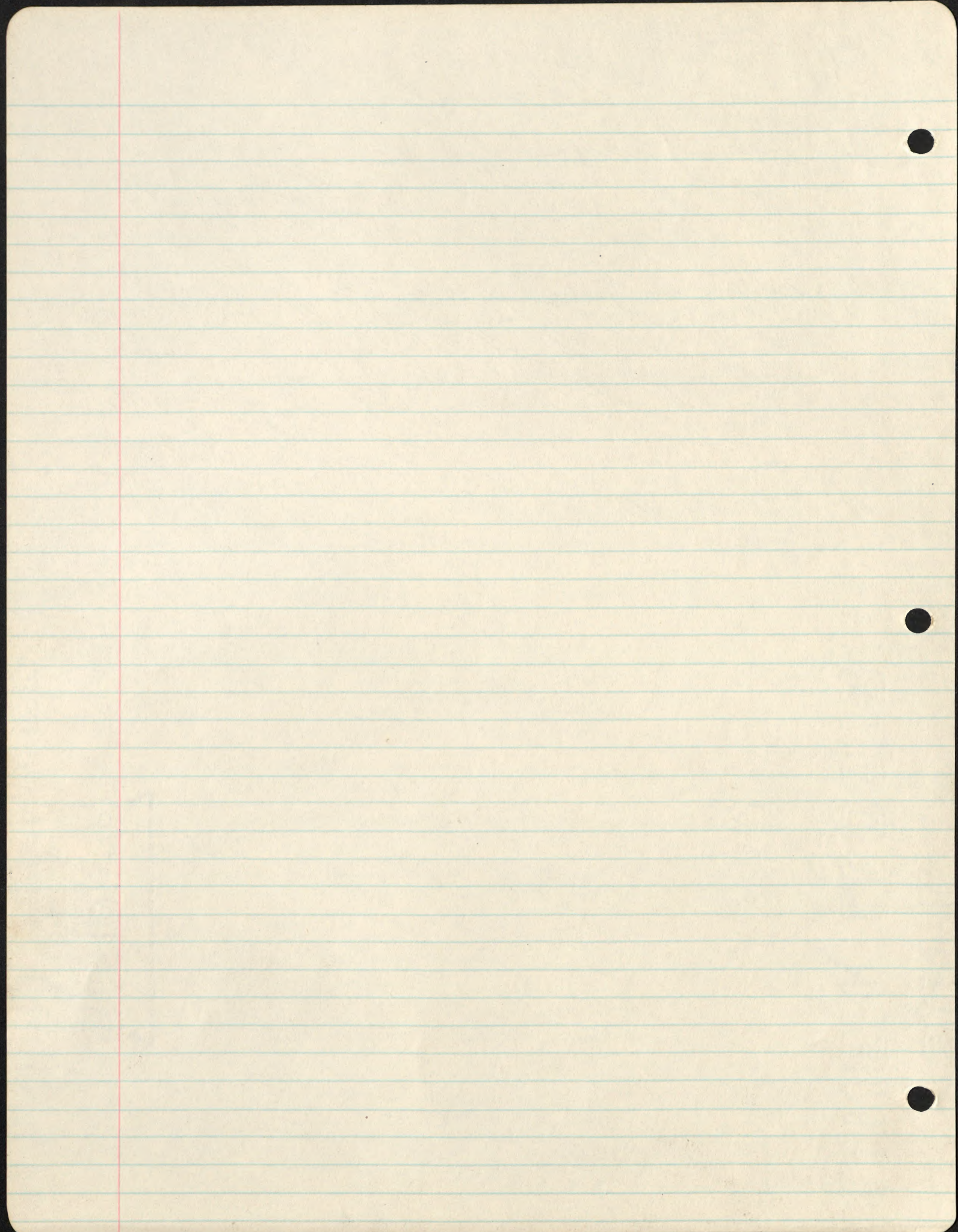
A specimen was brought in today by a Papuan. I could not determine from him where it was taken.

May 2 Berndt Camp Idenburg R., Netherlands New Guinea 50 m.

1 shot. Flying about the forested border of the flooded lagoon. It usually keeps 10 to 20 feet above the water and close into the vegetation. Its flight is slow with few beats. The flight of this bat usually begins about 6:25 while the flight of *Pipistrellus* and *Emballonura* is 6:05.

May 4 1 shot. In same <sup>locality</sup> ~~place~~ as specimen shot on May 2.







## Stenomys

July 26 Habbema Lake, Netherlands New Guinea.

5 from 50 traps. Two of the five were taken in the moist sphagnum-lined thickets of the hill slope. There are small trails in and about these thickets in which the traps were set. These animals were taken <sup>in the</sup> ~~in~~ the runways through the thick grass about the border of the lake. These runways formed a maze of passageways leading in every which direction. In the runways there was little or no dry seen and only a few signs of cutting, these being blades of grass left in the runway. The stomach contents of these animals was the fleshy parts of fruit or green vegetation no animal was secured therein. Of the three ♀ none showed signs of embryos nor of suckling young. The large ♀ had round worms in stomach and all were affected by an orange mite like looking parasite which attacked the ears, and wings and other soft but protected places. There is one thing that seems to me important to the habitat of this species and that is a moist, but low growing vegetation such as is offered by the ~~sphagnum~~ <sup>marsh</sup> and shore grass.

July 27 Habbema Lake, Netherlands New Guinea.

6-100 rat traps. Three were taken on each of the two lines. Three caught in the line set along the dry ridges were collected by one of my collecting boys. The other three were taken in the traps set the 25th. One of these three were taken along a small trail in the bottom of a small gully. This trail was between two mossy clumps. The other two were taken in the grass along the lake shore. The stomachs of these animals contain what appears to be the fleshy parts of fruits. No sexual activity in the ♀s. neither suckling young nor embryos.

July 28 Habbema Lake, Netherlands New Guinea.

1 individual taken in the 100 rat traps. ♀



was taken and prepared by my collector as I can give no information as to its habits, etc. He said however that it was taken in one of the traps set along the ridge north north east of camp.

July 29 Laberna Lake, Netherlands New Guinea 3225 m.  
1 individual in 100 traps. This individual was brought in and prepared by one of my collectors. Dr. Foxeopus collected 2 or 3 ticks from this individual.

July 30 Laberna Lake, Netherlands New Guinea 3225 m.  
2 individuals in 150 traps. Brought in by collector from line of traps.

July 31 Lake Laberna, Netherlands New Guinea 3225 m.  
2 individuals in 150 traps one of which is apparently of a different species. It is smaller in size with shorter skull, etc.

Aug 2 Lake Laberna, Netherlands New Guinea 3225 m.  
15 individuals in 372 traps. There is apparently 2 sp. in the group and possibly a 3rd. The two juveniles of the smaller sp. were taken ~~along~~ in the narrow stringy trails which are to be found in the short grass ~~and~~ moss habitat along the lake shore. These trails are well defined and apparently have a definite direction. The trail of the leaf from one mossy clump to another where the trail is replaced by a burrow. These small well defined trails are quite in contrast to those of the larger species of *Stromoxys*. Those of the latter species being large and with no apparent direction in mind but rather a maze of more or less defined trails throughout the region in which it exists. Where as the smaller species inhabits the short grassy regions and open mossy regions, the larger sp. prefers the dense grass thickets or brushy regions where there is a tangle of shrubs and



## Stenomys

mouse. In such cases when their trail has a definite direction is when it follows a natural crease as a small gully or the grass margin.

Aug 3 Lake Habbema, Netherlands New Guinea 3225m.

11 of this species were taken in 394 traps.

These specimens were taken in similar types of habitat as described above. There is one thing worth noting and that is the occurrence of the larger darker form in the moister heavier grass growth while the small brown ~~sp.~~ is to be found in the drier thinner grassy region.

Aug 4 Lake Habbema, Netherlands New Guinea 3225m.

8 individuals in 394 traps.

The larger species here is apparently inhabits a rather broad habitat. Today I caught one individual along the small trails in the low grass about the lake shore. It was in this type of habitat that I have previously caught the smaller species and Pogonomys.

Aug 5 Lake Habbema, Netherlands New Guinea 3225m.

6 individuals in 394 traps.

Two of the larger species were taken along ~~in~~ the traps set in the large runways through the heavy grass on the eastern western edge of the bog shore. There were numerous trails through the dense high grass on the immediate border of the lake. In similar sets I have also taken Rattus and Hydromys. Grasses and reeds are the dominant vegetation within 100 yd of this region. All ♀'s were examined ~~but~~ for embryos but none contained such.

Aug 6. Lake Habbema, Netherlands New Guinea 3225m.

14 individuals in 388 traps.

Of the 12 which I removed from the 191 traps set along the



stream in the grass valley east of camp and continuing up the and over the ridge north of camp. There is a wide variation in the types of habitat in which they are found. They were taken in traps set in grass thickets, in brush thickets, along about mossy Jungles, and one was taken beneath a dense high (1.4 m.) brush thicket in a small canyon. The <sup>ground</sup> vegetation was too dense to permit an undergrowth of grass or moss but rather the ground was covered with black, wet, rotting leaves.

Aug 7 Lake Habbema, Netherlands New Guinea, 3225 m.  
13 individuals 388 traps. These individuals were caught in broad habitat with moist dense or semi dense ground vegetation (moss, grass, shrubs) seeming to be the only prerequisite for their existence in this region.

Aug 8 Lake Habbema, Netherlands New Guinea, 3225 m.  
6 in 388 traps. Five of these six were taken in the grassy valley. Here there are runways through the heavier grassy clumps and along the grassy small tributary gorges. The other three were taken along the grassy border of the lake.

Aug 9 Lake Habbema, Netherlands New Guinea, 3225 m.  
8 in 388 traps. I have nothing further to add as to their habitat, but one thing that has interested me is the fact that most of the ♀ eggs I set which I have taken in my traps have had embryos. I have examined all ♀s with the possible exception of one or two and none to my knowledge have had embryos. Many of the ♂s on the other hand have enlarged testicles as though in or approaching the breeding season.

Aug 10 Lake Habbema, Netherlands New Guinea, 3225 m.  
8 in 387 traps. These 8 were taken along the lake shore where there was a thicket about a yard or a mossy carpet. The traps in which they were caught were set in well defined trails



25<sup>th</sup> September  
1958

3

## Stenomys

through the grass and more. No individuals were taken in the traps set in the maze of trails through the thick tall grass.

Aug. 11 Lake Habbema, Netherlands New Guinea, 3225 m.  
3 individuals in 387 traps. The only one which I removed from the trap was caught in a small runway through a narrow strip of semi heavy grass along the lake shore. Immediately back of it (2ft) this strip is the shorter grass the type that it is considered to inhabit.

Aug. 12 Lake Habbema, Netherlands New Guinea, 3225 m.  
15 individuals in 375 traps. The thing that impressed me about this catch was that these animals were taken in a wide variety of conditions, the following types of plant cover:  
Mossy forest where there the trees were a bit thin letting sunlight into the rhododendron undergrowth and mossy ground cover; open low bushy thickets with a heavy ground cover of moss which is clumped up about the base of bushes; dense grassy thickets along stream with tree ferns; low grass region along stream; grassy molly 11" ft from bank on tree ferns; along lake shore in thin grass region; along lake shore where there is heavy grass and reeds.

Aug. 13 Lake Habbema, Netherlands New Guinea, 3225 m.  
4 individuals in 375 traps. They were brought in by my collectors so I do not know under what conditions they were taken.

Aug. 14 Lake Habbema, Netherlands New Guinea, 3225 m.  
3 in 375 traps. One taken along gravelly lake shore, one in border forest where there was a heavy growth of bush, the other in the low bushy area with ground moss.

Aug. 15 Lake Habbema, Netherlands New Guinea, 3225 m.  
5 in 375 traps. Two from bushy forest the others from the lake shore.



- Aug 14 Lake Habbema, Netherlands New Guinea 3225m.  
2 in 375 traps. One taken upon the tall  
grass near the brushy hill slope in the upper  
valley west of the lake. The other was  
taken along the grassy lake shore.
- Aug 17 Lake Habbema, Netherlands New Guinea 3225m.  
2 in 375 traps. Both taken in the tall border  
grass about the lake.
- Aug 18 Lake Habbema, Netherlands New Guinea 3225m.  
13 in 375 traps. Brought in by collectors. Taken  
in various types of cover.
- Aug 19 Lake Habbema, Netherlands New Guinea, 3225m.  
10 in 375 traps. They occur ranges widely  
from the grass regions to the mossy forest.  
They do not seem to inhabit the dry ridges  
or the regions where the ground and moss is  
dry. They also do not inhabit the heavy forest  
regardless of conditions of moisture. Up to date  
none of the ♂ & ♀ specimens taken have had  
embryos.
- Aug 20 Lake Habbema, Netherlands New Guinea 3225m.  
10 in 345 traps. Seven of the were taken in  
the grass or mossy forest areas along the lake shore  
the others were taken in the mossy forest thicket  
on the moist hill slopes.
- Aug 21 Lake Habbema, Netherlands New Guinea 3225m.  
10 in 387 traps. They were taken in numbers  
along the grassy margin of the lake and its  
outlet.
- Aug 22 Lake Habbema, Netherlands New Guinea 3225m.  
3 in 382+ (11 other traps). The two specimens prepared  
were taken in numbers along the grassy margin  
of the outlet stream. The other was brought in  
by a collector.



# Stromys

Aug 15

Runways through old clumps of grass →

Exit to open short grass

Maze of small runways through large clump of grass and moss

Small Grass Clump

Bush

Lost in short grass

Grass Clump

Grass Clump

Grass Clump

Clump

Bush

Short Grass

Grass clumps

Grass Clumps

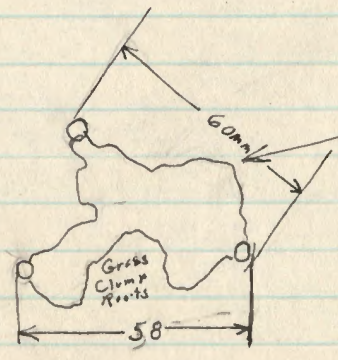
Stream through Grass Valley

Stream Bank

Trail lost in short grass

Stream

Grass Clumps



8m

Note: No dung or kitchen middens seen along trail although apparently used.



Aug 23 Lake Habbema, Netherlands New Guinea 3225m.

8 in 386 traps. #4792, #4793, #4794, and #4803 were taken in border of the mossy forest, 1 kilometre NNE of camp. Here there is a heavy growth of *Pododendrum* and *rosiniana* bush reaching a height of 8 to 12 ft. The bush is moderately green that is there is not a heavy canopy shading the floor.

Over the floor is a heavy cover of moss which is changed about the bases of the bushes and thin <sup>low</sup> sprawling branches. The stems of this cover that seems to differ from that of the forest in the open bush, leaf of *Pododendrum*, and a heavy mossy ground and basal bush cover. The other 4 individuals were taken along the lake and within grass margin. The color of these two species, the grass species of the border forest species is pronounced.

Previously this has been difficult to recognize because of trapping in the grass region with bordering bushy areas. These two species apparently intermingle in such regions.

Aug 24 Lake Habbema, Netherlands New Guinea 3225m.

6 in 386 traps. The first three in the catalogue were taken in the bushy forest as described above, the other (3) were brought in by collectors. I am of the opinion that at least the first species moves about some during the daylight hours. Yesterday one was found in a trap on reaching it in the afternoon, and this morning one individual was disturbed by our approach and ran over the trail in which a trap was set. Orbell and I had the trap go off and moved the worn animal from the same.



## Stenomys

- Aug 25 Lake Habbema, Netherlands New Guinea, 3225m  
5 in 386 traps. #4818 taken in the  
bushy forest border with heavy mossy  
ground cover. The others were taken by the  
collectors along lake shore or in bushy forest near  
entiret.
- Aug 26 Lake Habbema, Netherlands New Guinea, 3225m  
3 in 386 traps. Brought in by collectors.  
The larger ♀ had large mammary glands, not  
projecting but looked as though they had not  
been long out of use. There were no embryos.
- Aug 27 Lake Habbema, Netherlands New Guinea, 3225m  
5 in 386 traps. Brought in by collectors.
- Aug 28 Lake Habbema, Netherlands New Guinea, 3225m.  
# in 386 traps. The three prepared  
specimens were brought in by collectors. The  
one disjunct with a crushed skull was taken  
at the edge of the mossy forest where the  
heavy bush meets the low trees. The trap  
was set along a runway at the mossy base  
of a tree.
- Aug 30 Lake Habbema, Netherlands New Guinea, 3225m.  
2 in 386 traps. Brought in by collector. There  
is one thing that should be mentioned in this  
connection and that is the presence of buttercup  
and sphenogon moss which often grow their  
runways through the short grass region. These  
plants probably exist here because the little  
springs are better suited to their growth.  
Perhaps fertilization and dissemination has something  
to do with it. Note <sup>(on)</sup> measured on the 15th of  
the month 18cm. in diameter
- Aug 31 Lake Habbema, Netherlands New Guinea, 3225m  
4 in 386 traps. The three prepared as



specimens were taken from the traps by me. The first 2 were caught in traps set in the brushy edge of the mossy forest, the 3rd in a grassy silt hole bordering the forest.

Sept. 1 Lake Habbema, Netherlands New Guinea 3225m.

2 in 194 traps. Both taken in brushy mossy forest border. (Previously described) Specimen in alcohol.

Sept 4 7km NE Wilhelmina Top, Netherlands New Guinea, 3600m.

9 in 187 traps. 4 were brought in by collector. The other were taken from traps set in small runways about the <sup>grass</sup> base of the cliffs and along the border of grassy valley and the brushy hill slopes. The specimens were taken in the heavy brushy region or in the grassy ~~open~~ areas where grass was the only vegetation. The preference seems to be a mixture of the two, that is grass with scattered <sup>brush</sup> clumps or bunches of grass and brush areas.

Sept 7 7km NE Wilhelmina Top, Netherlands New Guinea 3540m

10 in 381 traps. The first 3 were taken in the heavy grass bordering the camp valley stream. The grass in course and thick with runways through it. The other 7 were taken on catologues were taken by collector from traps set on the hill slope above camp.

Sept 10 7km NE Wilhelmina Top, Netherlands New Guinea 3540m.

5 in 381 traps. The first 2 in catologues were taken along the thick grass bordering the stream. The other three were taken on the open brushy hill slope east of camp.

Sept 11 7km NE Wilhelmina top Netherlands New Guinea 3560m.

4 in 404 traps. The first in the catalogue for today catch was taken in a trap set in the grassy stream side. The other were brought in by collector.



Stenomys

Sept 12 2 km N<sup>o</sup> Wilhelmina-top, Netherlands New Guinea 3560m.  
9 in 404 traps. # 4886 to 4888 were taken when  
the <sup>sub-</sup>alpine forest border was grassy area. The other 6 were  
brought in by collectors from the line of traps which  
is on the hill slope <sup>N<sup>o</sup>W</sup> of camp.

Sept 13 2 km N<sup>o</sup> Wilhelmina-top, Netherlands New Guinea 3560m.  
2 in 404 traps. Both individuals were brought in  
by collectors from a line of traps set on the hill slope <sup>N<sup>o</sup>W</sup> of  
camp.

Sept 14 2 km N<sup>o</sup> Wilhelmina-top, Netherlands New Guinea 3560m.  
6 in 404 traps. Specimens taken in both  
grass land and sub-alpine forest.

Sept 15 2 km N<sup>o</sup> Wilhelmina-top, Netherlands New Guinea 3560m.  
17 in 363 traps. 15 of the 17 were taken in the  
traps set yesterday along the lower slope of  
the SW side of the camp valley. The traps were set  
principally in three types of habitat: grass land,  
sub-alpine forest, and the forest border. 75% of the  
individuals taken were caught in traps set  
in small runways in the border forest. The  
two other types of habitat seem relatively sterile.  
No apparent signs of embryos have been  
found as yet in this species.

Sept 16 2 km N<sup>o</sup> Wilhelmina-top, Netherlands New Guinea 3560m.  
9 in 363 traps. These were taken in small  
runways through the grass and near the  
border forest.

Sept 17 2 km N<sup>o</sup> Wilhelmina-top, Netherlands New Guinea 3560m.  
18 in 358 traps. Habitat as preferred  
is the edge of the forest where the  
bushy growth meets the grass. It is in  
such places that the majority of the  
individuals are caught.



Sept 18 2 km E Mt. Wilhelm, Netherlands New Guinea 3560 m  
6 in 358 traps. 5 were brought in by collector, the  
other was taken just inside the oak alpine forest which  
borders the grassy valley.

Sept 20 2 km E Mt. Wilhelm, Netherlands New Guinea 3800 m.  
2 in 104 traps. One was brought in by  
collector, the other was caught in a *Setula* trap set in  
a *Mallomys* runway. The region was one of  
large talus which though eye had been  
partly overgrown by bush and herbs. About  
the jumble of rocks and brush there was numerous  
logs, runways and it was in one of these  
that the animal was taken.

Sept 21 2 km E Mt. Wilhelm, Netherlands New Guinea 3800 m to 4050 m.  
7 in 104 traps. This group of mammals  
was taken from 3800 m to 4050 m, the entire length  
of my trap line. There is the apparent  
sp. here, one which inhabits the forest on  
lower forest where it joins the grass land,  
the other, the grass land species. The latter  
is restricted to the lower levels probably  
not going over 4000 m while the other goes  
considerably higher (4250 m?) upon the grassy  
hill slopes of the mountain.

Sept 22 2 km E Mt. Wilhelm, Netherlands New Guinea 3800-4050 m.  
1 in 104 traps. According to the  
collector who brought in the individual it  
was taken at the base of a *Setula* stem  
on the <sup>steep</sup> grassy hill slope. This hill slope  
is old talus overgrown to grass with few  
sublime plants, mosses and scattered coprosma  
bush.

Sept 23 2 km E Mt. Wilhelm, Netherlands New Guinea  
2 in 104 traps. #4990 was taken at the  
lower end of my trap line where there is an  
open forest growth with an undergrowth of



Stenomys

grass and *Luhassina* photo. It was taken in ~~the~~ a trap set in a small runway leading from the grass beneath a scrubby tree. The other individual # 991 was taken at the upper end of the traps line where a heavy growth of grass, and an undergrowth of moss covers an old talus slope. This slope is very steep and contains scattered *Crocosoma* bushes and exposed boulders.

Sept 24 2 km E Mt. Wilhelm, Netherlands New Guinea 3800 m.  
3 in 104 traps. The juvenile was brought in by collectors from the steep traps. Habitat long tall partially open with scrubby trees, ferns, bushes and mosses. The other two were taken on the or rather at the edge of the grassy talus slope, one beneath a *Crocosoma* bush and the other at the edge of the cliff. The one taken at the high altitude by the cliff was not the grass form as I should have expected but rather the forest form. Apparently the forest form is more adaptive to conditions than the grassy form which I believe lives entirely within its grassy habitat.

Sept 25 2 km E Mt. Wilhelm, Netherlands New Guinea 3800 m.  
3 in 104 traps. Taken in and about the tall grass of the talus. One individual a grass land form was taken in same trap as a forest form was taken in yesterday. The embryo. One specimen was taken in <sup>one of the traps</sup> a small runway <sup>at</sup> in the side center, or near it, of the <sup>tall</sup> grassy talus.

Sept 26 2 km E Mt. Wilhelm, Netherlands New Guinea  
2 in 104 traps. Brought in by collectors who said they were taken in the open bushy forest where the heavy <sup>tall</sup> grass dominates the undergrowth.



Sept 21 2 km E Mt. Wilhelm, Netherlands New Guinea 3890 m.  
1 in 114 traps. Specimen discarded. Taken  
at edge of grass patch in open sub-alpine  
forest.

Sept 28 2 km East Mt. Wilhelm, Netherlands New Guinea 3800 m.  
5 in <sup>101</sup> traps (1 discarded): #5024 was taken in  
the middle of a tall (cane) grass thicket which  
is in the bottom of a narrow steep (side hill)  
canyon. The others were taken in small  
runways at the edge of a similar  
grass patch, the sub-alpine forest border.

Sept 29 2 km E Mt. Wilhelm, Netherlands New Guinea 3800 m.  
1 in 101 traps. Caught in small runway  
through moss depression in <sup>low</sup> brush  
brush growth. The general region was that  
of <sup>very low stems</sup> tall grasses which had become greyness  
with <sup>scattered</sup> ferns, mosses & sub-alpine  
plants.

Oct 12 9 km N<sup>o</sup> Lake Habbema, Netherlands New Guinea 2800 m.  
13 in 350 traps. The 4 which I removed  
from the traps were taken from traps set  
in runways (semi dense) beneath moss covered fallen  
trees or <sup>about</sup> the mossy bases of living trees. They  
seem to inhabit the site of the mossy forest.

Oct 13 9 km N<sup>o</sup> Lake Habbema, Netherlands New Guinea 2800 m.  
9 in 431 traps. Their habitat appears  
to be the grass covered litter and growing  
vegetation which covers the forest floor. They  
have runways <sup>beneath</sup> the fallen logs, about  
roots and in similar protected places  
beneath the mossy litter.

Oct 14 9 km N<sup>o</sup> Lake Habbema, Netherlands New Guinea 2850 m.  
2 in 431 traps. Brought in by collector from  
traps set in mossy forest.



Stenomys

- Oct 15 9 km. N.E. Lake Habbema, Netherlands New Guinea 2800m  
1 in 431 traps. Brought in by collectors.
- Oct 16 9 km. N.E. Lake Habbema, Netherlands New Guinea 2800m  
3 in 431 traps. Taken in traps set beneath the mossy litter of the forest; about fallen logs, base of trees etc.
- Oct 17 9 km. N.E. Lake Habbema, Netherlands New Guinea 2800m.  
6 in 430 traps. Habitat is that of the small trail in and about the <sup>covered</sup> mossy litter of the mossy forest.
- Oct 18 9 km. N.E. Lake Habbema, Netherlands New Guinea 2800m  
3 in 425 traps. Caught in traps set in runways and beneath logs, etc about the litter of the mossy forest floor.
- Oct 19 9 km. N.E. Lake Habbema, Netherlands New Guinea 2800m.  
2 in 425 traps. Taken in the mossy forest where small trails are offered in brushy vegetation or about litter. The conditions are usually moist mossy ground or litter covering.
- Oct 20 9 km. N.E. Lake Habbema, Netherlands New Guinea 2800m.  
1 in 220 traps. Traps set in runway through broad end litter of the semi open mossy forest.
- Oct 21 9 km. N.E. Lake Habbema, Netherlands New Guinea 2800m  
13 in 418 traps. A thing of interest today in the specimens taken was the fact that most of them were taken in the <sup>of bare canyon slopes</sup> grasslands or brushy areas <sup>in</sup> the mossy forest rather in the pine forest of the higher ridges.
- Oct 22 9 km. N.E. Lake Habbema, Netherlands New Guinea 2800m  
2 in 418 traps. Taken in runways through the littered brushy undergrowth of the canyon mossy forest.



Oct 23 John Mc Lach Habema, Netherlands New Guinea 2800m.  
1 in 418 traps (discarded) Brought in by collectors.

Oct 24 John Mc Lach Habema, Netherlands New Guinea 2800m.  
3 in 414 traps. 2 brought in by collectors. The other taken in ~~some~~ trail beneath the moss covered litter of the mossy forest.

Oct 25 John Mc Lach Habema, Netherlands New Guinea 2800m  
4: 3 in 414 traps, 1 brought in by natives. The other ~~high~~ taken in traps brought in by collectors.

Oct 26 John Mc Lach Habema, Netherlands New Guinea 2800-2700m.  
6 in 409 traps. Species occurs in both the rain forest and secondary growth forests along the stream side land slopes. The essential thing seems to be litter beneath which <sup>are the</sup> runways are. The rain forest seems to afford a greater quantity of such runways.

Oct 27 John Mc Lach Habema, Netherlands New Guinea, 2700m.  
2 in 413 traps. Both brought in by collectors.

Oct 28 John Mc Lach Habema, Netherlands New Guinea 2700m.  
4 in 413 traps. Brought in by collectors from traps.

Oct 29 John Mc Lach Habema, Netherlands New Guinea 2700m.  
2 in 413 traps. Brought in by collectors.

Oct 30 John Mc Lach Habema, Netherlands New Guinea 2800m.  
3: 2 in 413 traps, 1 brought in by natives.

Oct 31 John Mc Lach Habema, Netherlands New Guinea 2800m.  
1 in 413 traps. Taken from beneath log in litter of mossy forest.

Nov 1 John Mc Lach Habema, Netherlands New Guinea 2800m.  
1 in 413 traps. Brought in by collecting logs.



Stenomys

- Nov 2 9 km N E Lake Habbema, Netherlands New Guinea 2800 m.  
1 in 197 traps. Brought in by collector.
- Nov 4 9 km N E Lake Habbema, Netherlands New Guinea 2800-2700 m.  
2 in 347 traps. #5353 taken beneath rotting log on littered bushy canyon slope of mangrove forest. The other individual brought in by native. Hunt.
- Nov 5 9 km N E Lake Habbema, Netherlands New Guinea 2800-2700 m.  
4 in 347 traps. Taken in ~~and~~ littered areas of the mangrove forest. Faint runways seen to be beneath rotting mangrove logs.
- Nov 6 Bele River, 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
1 brought in by native.
- Nov 9 Bele R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
2: 1 in 309 traps, 1 brought in by natives. The one in traps brought in by collector who line of traps is in the heavy forest.
- Nov 10 Bele R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
2: 1 in <sup>308</sup> traps, 1 brought in by natives. The one taken in the traps from trap set in runway about the route of a tree in the heavy forest.
- Nov 11 Bele R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
4 brought in by natives.
- Nov 12 Bele R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
1 in 308 traps. Taken in the forest litter at the edge of a small grassy opening.
- Nov 14 Bele R., 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
2: 1 brought in by natives, 1 in 308 traps #5567. Taken in trap set in runway through bushy litter of the forest floor. The area had been rooked up by the native pigs.



Nov 15 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
3 brought in by natives.

Nov 14 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
1 in 416 traps. Taken by collectors in forested region.

Nov 17 Bela R., 10 km N Lake Habbema, Netherlands New Guinea 2200m.  
5 brought in by natives.

Nov 19 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
10 brought in by natives.

Nov 20 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
18 brought in by natives.

Nov 22 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
4: 2 brought in by natives. 2 in 404 traps.  
The trapped animals were taken from traps set in runways beneath logs in litted forest area.

Nov 23 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
1 in 404 traps. Taken in a very dense second growth brush thicket. Trap was set in a small runway over the leaves and just the base of the brush.

Nov 25 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
1 in 404 traps. Taken in runway through litters in of the same forest where there was an open growth of underbrush.

Nov 27 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
7: 6 brought in by natives, <sup>26171</sup> 1 in 404 traps.  
Taken in forested area, heavy undergrowth and litters, and on forest floor of leaves, small runway.

Nov 29 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
1 in 411 traps. Taken in a litted area in the forest. Habited the heavy forest with litters and open cover of brush over the litters of logs and deep forest floor.



## Stenomys

- Dec 2 Belim R. 18 km N Lake Habbema, Netherlands New Guinea 2200 m.  
9 brought in by natives.
- Dec 10 Belim R. 18 km N Lake Habbema, Netherlands New Guinea 1600 m.  
1 in 199 traps. Taken in a small runway through a mixed cover of grass and shrub along a small road.
- Dec 11 Belim R. Netherlands New Guinea 1600 m.  
1 in 384 traps. Taken by collectors in trap line set through abandoned gardens, their borders, or near by roads.
- Dec 12 Belim R. Netherlands New Guinea 1600 m.  
1 in 380 traps. Taken in mixed cover of brush and grass along drainage<sup>[?]</sup> ditch of an abandoned native garden.
- Dec 13 Belim R. Netherlands New Guinea 1600 m.  
1 in 380 traps. Brought in by collectors.
- Jan 10 15 km SW Bernhard Camp, Inderburg R. Netherlands New Guinea 1800 m.  
1 in a number of part of the 193 mouse traps. These traps were set this morning and some 5 hrs later the animal was removed from the trap. This would show that the heart is at least partially diurnal. It was taken at among the tangled root base of a large tree in the mossy forest.
- Jan 11 4 in 425 traps. This animal inhabits ~~the~~ the mossy forest where there are is little sand as log<sup>moss</sup> rock, open root system. Traps in which they were taken were set about beneath old moss covered logs, at the base of trees where an exposed root system, and beneath moss covered rocks. There in the large places are trails worn by (or just looking) of moss.
- Jan 12 3 in 425 traps (1 discard). Of the two specimens prepared one was taken in traps set beneath a mossy log and the other among the <sup>exposed</sup> roots of one of the forest trees.
- Jan 13 1 in 425 traps. Taken beneath log in a runway. Runway was log, apparently used by several sp. of mammals.



Jan 14 15 km SW Bernhard Camp, Idorung R., Netherlands New Guinea 1800m.

3 in 425 traps. Two brought in by collectors.

Other individual trapped in obscure runway through a small underground thicket of a moist hill slope.

Jan 15 8 in 420 traps. In every case the best was taken from a runway under cover of logs, that underground or root masses.

Jan 16 4 in 420 traps. Brought in by collectors.

Jan 17 7 in 419 traps. Taken in small runways through underground thickets or about litter.

Jan 18 2 in 421 traps. Brought in by collectors.

Jan 19 2 in 421 traps. One taken in small runway through the underground, the other was taken beneath a log in a litter heap.

Today, about 330 PM I saw one of the crickets running along beneath a fallen log, in what would be considered to be a well worn runway. It held its tail rather high and stiff so it ran and jumped <sup>along</sup> ~~over~~ the rocky surface of the run way.

Jan 20 1 in 421 traps. Brought in by collectors.

Jan 22 1 in 421 traps. Brought in by collectors.

Jan 23 1 in 421 traps. " " "

Jan 25 1 in 420 traps. Taken in a runway beneath a small moss covered log in a littered forest area.

Jan 26 5 in 419 traps. Taken in moist protected (shaded) spots such as under the cover of mossy logs, about the exposed roots of trees, and in litter.

Feb 1 18 km SW Bernhard Camp, Idorung R., Netherlands New Guinea 2150m.

1 in 143 traps. Taken in a small runway beneath moss covered litter in low thick mossy forest.

Feb 4 7 in 415 traps. Taken under a moss covered log and other litter of the mossy forest. The area in which these were taken differs from previous mentioned areas in that the forest has a moderately heavy undergrowth of bamboo, which forms a leaf litter on the floor of the forest leading to look out the moss.



Wm. D. Richardson  
1939.

11

## Stenomys

Feb 5 18 km SW Bunka Camp, Gambia. Waterloo the Guinea 2150 m.

6 in 411 traps. Taken in and about sheltered  
runway about litter. Habitat Wet forest with leaves  
undergrowth.

Feb 6

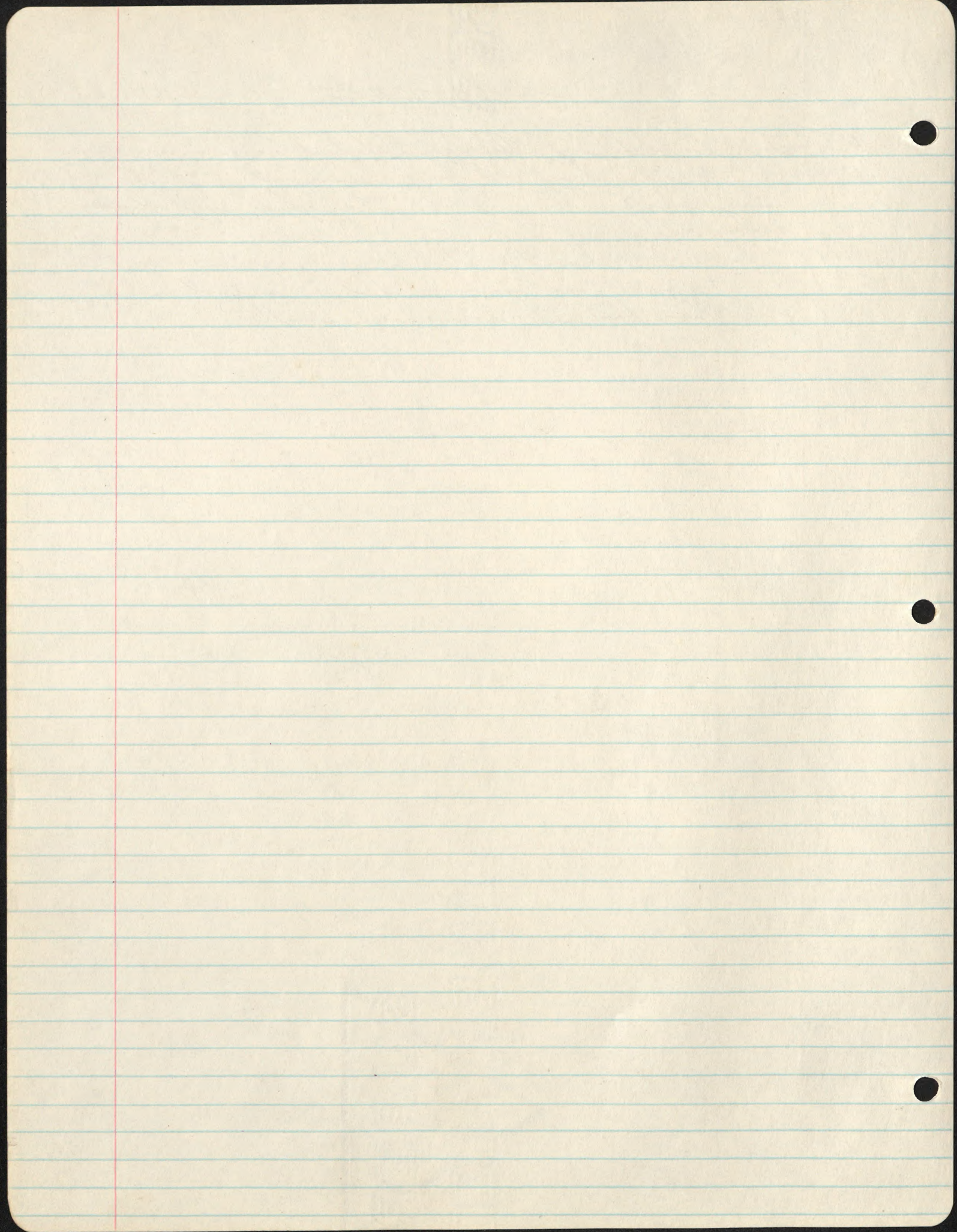
1 in 411 traps. Brought in by collector.

Feb 8

3 in 411 traps. Taken about litter, in small runways.

Habitat Wet forest with leaves undergrowth.







Wm B. Richardson  
1938

## Sus

July 5 Hollandia, Netherlands New Guinea.

A juvenile animal of this species was brought in this afternoon by a local native. According to him he caught it in a trap "Mominé". During my hunting here in the jungle I have seen many signs of this animal. Such signs are not limited to the jungle alone but to swamps and grass land as well.

July 12 Hollandia, Netherlands New Guinea

A sub adult of this sp. was brought in yesterday by the Dyak collector. They had shot it in the jungle near by. It did not have the looks of a jungle pig but more like the domestic ones seen in this community. Skull only was saved.

July 14 Hollandia, Netherlands New Guinea.

A juvenile of the genus was brought in today. I do not know the exact locality from which it was taken.

Aug 15 Lake Hobbema, Netherlands New Guinea, 3225 m.

Up to date no signs of wild pig have been seen in this region. Some the footprints of young animals have been seen accompanying those of natives passing through. Parts of a skull and skeleton of a small pig were seen at one of their houses near the lake. The remains had been burnt.

Dec 17 Bainu, Netherlands New Guinea, 1600 m.

1 individual brought from native. Several (4 to 6) pigs of this size have been purchased by us from the natives but they are reluctant to sell a larger one. The pigs are one of the family, living in the same house with the women, after becoming as tame as dogs. They vary in color from black to white and with all types of markings. The ♀s are often



castrold. In fact I have not seen an adult ♂ in this vicinity. The litter observed have varied from 1 to 4 young. They are an important part in the native life. Surprising food for fruit etc., gues for their black <sup>you</sup> paint, gues for the bones and spurs, ornaments such as tails, lower jaws, and the conical teeth.

Apr. 17 Bernard Camp Idenburg R. Netherlands New Guinea 75 m.

I shot this afternoon by collecting bog. There are many signs of pigs in this region both on the flood plain and hillsides. They are apparently shy for they have left the vicinity of camp being necessary now to go some distance to obtain them or see fresh tracks. At the last camp 8500 m. there were a few pigs in the vicinity although none were obtained. This hunt was barren, no end.

Apr. 20

I shot by Rande collecting bog on upper flood plain. While out hunting they say my boys saw 3 but were unable to get them.



Wm. S. Richardson  
1938

## Syconycteris

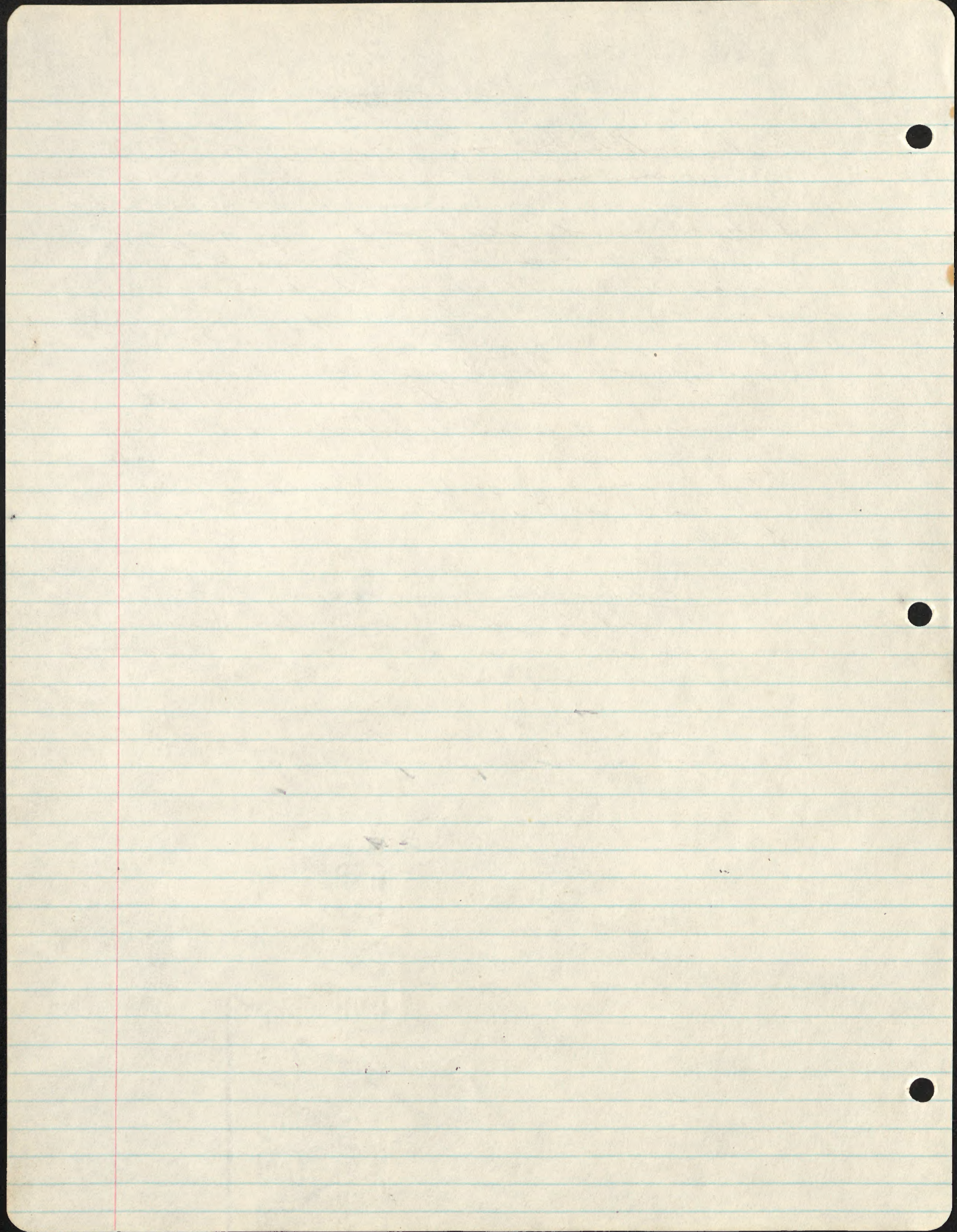
Dec. 13 Balim R., Netherlands New Guinea 1600 m.

2 individuals shot. A number were seen flying low (6-100 ft. ground) along the open forested bank of the river. The strip of forest [?] is made up principally of casuarina and fig trees the latter furnished the, or part of, the food of this bat. They are seen congregated about these trees, flying in slighting and again flying away. The stomach contents of the 2 bats were that of figs & other types of fruit were not discernable. The bats on slighting in the branches would often utter a series of squeaks which were repeated during the course of feeding. The ♀ contained no embryos but the 2 mammary glands were functional. That is milk could be squeezed out from them. Fox collected the mites.

Dec. 16 Balim R., Netherlands New Guinea 1600 m.

1 shot by collector. These bats usually appear in this vicinity about 8:00 in the evening and seemingly coming east from the south.







Wm D. Richardson  
1938  
1939

## Uromys

- Oct 17 9 km NE Lake Habbema, Netherlands New Guinea 2800m  
1 in 24 stub traps. Brought in by collector. Probably taken in traps set in one of the *Agave*, well defined runway which is fairly common on the floor of the sunny forest.
- Nov 10 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200m  
1 brought in by natives. Virgin forest.
- Nov 17 Bela R., 15 km N Lake Habbema, Netherlands New Guinea 2200m  
1 brought in by natives. v.g.
- Nov 20 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
1 brought in by natives.
- Nov 21 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
2 brought in by natives.
- Nov 25 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
1 brought in by natives.
- Nov 28 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
2 brought in by natives.
- Dec 1 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
2 brought in by natives.
- Dec 3 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
1 brought in by natives.
- Dec 4 Bela R., 18 km N Lake Habbema, Netherlands New Guinea 2200m.  
1 brought in by natives.
- Feb 6 18 km SW Bundak Camp, Jukung R., Netherlands New Guinea 2150m.  
1 in 27 stub traps. Brought in by collector. Said it has been taken in traps set on hard floor over open forest floor. Habitat mossy forest with bamboo undergrowth. The sign of a comb. or young. Animal very fat.



Feb. 10 18 km SW Bernhard Camp Idenburg R. Netherlands New Guinea 2150 m.

1 in 32 snares. Brought in by collector. Taken in a large runway ~~over~~ along a ridge. Habitat mossy forest. This animal was one which had previously been taken in a steel trap but had escaped leaving its foot behind (now in pull). It was caught in a snare some  $\frac{1}{2}$  km away from any steel traps. I ~~wonder~~ wonder if this animal under ordinary circumstances covers such a large area. Stomach contained remains of fruit. There are only 4 pair of mammary glands. Not lactating. No signs of sex.

Feb. 14 6 km SW Bernhard Camp Idenburg R. Netherlands New Guinea 1200 m.

1 in 27 steel traps. Brought in by collector. Testes enlarged.

Feb. 15. 1 in 17 steel traps. Brought in by collector. Stomach contained fruit remains. No green stuff apparent. Testes enlarged.

Feb. 25 1 in 134 snares. Taken in a runway on a large mossy log which formed a low bridge over a small stream. Habitat streamside low open undergrowth, tall second story growth shading the stream and open forest. Stomach contained the remains of fruit.

Feb. 27 1 in 182 snares. Male with testes enlarged. Long vibrissae rays of which were removed during careless preparation of the specimen.

Mar. 2 1 in 182 snares. Brought in by collector. Stomach contained remains of fruit. There were only 2 posterior pair of mammary glands. 1 emb. present.

Mar. 5 1 in 27 steel traps Brought in by collector.

Mar. 7 1 in 231 snares " " " "

Mar. 8 4 km SW Bernhard Camp Idenburg R. Netherlands New Guinea 850 m.

1 in 87 snares. Brought in by collector. Stomach contained remains of fruit. No emb., vagina open enlarged. 4 mammae (2 pair) present. According to collector taken in forest.



# Thomomys

- Mar. 9. 4 Km. SW Bernhard Camp Idenburg R., Netherlands New Guinea 850m.  
1 in 141 snares Brought in by collector.  
Stomach contained fruits. No emb. 4 (2 per.) ovaries.
- Mar. 12 1 in 27 stake traps. Brought in by collector.
- Mar. 12 6 Km SW Bernhard Camp Idenburg R., Netherlands New Guinea 1250m.  
1 in 231 X2 snares. Brought in by natives. No emb. Stomach contained remainder of fruit. 4 (2 per.) ovaries.
- Mar. 21 4 Km. SW Bernhard Camp Idenburg R., Netherlands New Guinea 850m.  
1 in 670 snares. Brought in by collector.  
4 ovaries (gestation). No emb.
- Mar. 27 1 in 27 stake traps. Brought in by collector. Taken in trail along ridge through mossy forest. Stomach empty. Testis enlarged.
- Mar. 28 1 in 845 snares. Brought in by collector.
- Mar. 31 1 in 27 stake traps. Brought in by collector. Taken on a ridge in the mossy forest. 4 ovaries, <sup>large;</sup> gestation, not lactating. No emb. Stomach contained fruit remains.
- Apr. 3 1 in 987 snares. Brought in by collector.
- Apr. 4 1 in 998 snares. Brought in by collector.
- Apr. 7 1 in 1075 snares " " " "
- Apr. 14 Bernhard Camp Idenburg R., Netherlands New Guinea 75m.  
1 in 27 stake traps. Brought in by collector. Taken on an ridge of <sup>low</sup> ~~flat~~ hill. Stomach contained remains of fruit.
- Apr. 15 1 in 27 stake traps. Brought in by collector. Also taken on ridge <sup>at base of forest hills</sup> above flood plain.
- Apr. 16 2 in 268 snares. Brought in by collector. Were taken on lower mountain slope just above flood plain.
- Apr. 30 1 shot last evening. When first seen scampering through shallow water and over the litter of the recently inundated forest of the lagoon border. On being pursued it climbed a tree some 6 ft up where it was shot. It climbed up the trunk of this tree clinging



to the vines. It moving rapidly and easily. 4 mammary glands were functional.

May 1 Deerband Camp Chyng B. Netherlands New Guinea 50 m.

1 shot yesterday evening. It was on one of the narrow strips of <sup>exposed</sup> land along the flooded lagoon. High water has made these areas into islands. They are usually forested with a lower type vegetation than the low, more frequently indicated, areas. The rat was seen running along the ground through the undergrowth when it was shot.

May 8

1 in 27 steel traps. Brought in by collector. Taken on low mountain slope.