

TRAPPING OF AIR-BORNE INSECTS IN THE ANTARCTIC AREA (PART 2)¹

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Abstract: Trapping was done on ships and on land in continuation of studies of natural dispersal in the Antarctic area. A few insects were trapped in Antarctica, 113 near or south of New Zealand, and 132 between Australia and Macquarie Island. The southernmost trappings included representatives of Acarina, Collembola, Homoptera, Coleoptera, Diptera and Hymenoptera.

Introduction: This second preliminary report² on the results of trapping of air-borne insects in the Antarctic area concerns work in scattered areas, partly on the Antarctic continent and partly from ships at sea, during the 1960-61 season. The results from air-plane trapping are reported separately (see article by Gressitt, Sedlacek, Wise and Yoshimoto). This work was done on the United States Antarctic Research Program (National Science Foundation), with facilities and logistics supplied by the U. S. Naval Support Force, Antarctica (Task Force 43), and by the Australian, New Zealand and Chilean Antarctic programs. Gressitt participated in the Australian National Antarctic Research Expedition (resupply trip to Macquarie Island), the Leech brothers spent the austral summer in the Palmer Peninsula-South Shetland Islands area with the Chilean Antarctic Expedition, Sedlacek worked in the New Zealand-McMurdo area and operated the airplane trap on the United States program and Wise worked in the same areas and at Hallett Station, the joint New Zealand-American station, and in southern Victoria Land, as well as operating the airplane trap. The reports on native fauna of Antarctica and Macquarie Island will appear later.

Methods: Trapping methods were in general the same as those used during the preceding season except for minor modifications of methods of flying the large nylon nets. No more Otter plane trappings were made during the past season, and instead a high-speed trap for use in a Super-Constellation plane was developed (see other article). Nylon nets on steel rings of 75 cm diameter were the dominant ones used, both on land and on ships, but some were of 1 meter, 91 cm or 61 cm ring diameter. A modification of method of

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2. For Part 1, see *Pacific Insects* 2 (2): 345-50, 1 fig., 1960.

Table 1. Trapping of air-borne insects aboard "Magga Dan" (Gressitt).

Date 1960	Wind Direc- tion	Wind Speed (knots)	Starting		Ending		No. Speci- mens	Order	Family
			S. Lat.	E. Long.	S. Lat.	E. Long.			
30. XI.	SSW	22	38°	144°	39° 40'	146° 12'	3	Diptera	Chironomidae
							2	Hymenoptera	Formicidae
							3	Diptera	(Crushed thorax)
	SW	19	39° 40'	146° 12'	40° 0'	146° 50'	3	Thysanoptera	?
							2	Heteroptera	Lygaeid (<i>Nysius</i>)
	SW	10	39° 50'	146° 40'	40° 36'	147° 50'	2	Diptera	Fragments—legs
							1	Coleoptera	?
	SW	8	39° 55'	146° 50'	40° 45'	148° 30'	3	Hymenoptera	Formicidae
							2	Homoptera?	(exuviae)
							2	Diptera	Psychodidae: <i>Psy- choda penicillaya</i> complex
							1	"	Chironomidae
						5	Hymenoptera	Formicidae	
						1	Diptera	Acalyptr.	
						1	Hymenoptera	Formicidae	
1. XII.	SW	24	40° 45'	148° 30'	42° 36'	149° 50'	1	Homoptera	Aphididae
							1	Diptera	Tachinidae
							1	"	Phoridae
							1	"	Ceratopogonidae
							2	"	(legs)
							1	Solpugida?	
							2	Acarina: ?	(exuviae)
	SW	23	40° 45'	148° 30'	42° 43'	149° 58'	2	Homoptera	"
							1*	Neuroptera	Hemerobiidae
							1	Diptera	Psychodidae: <i>Psy- choda sp.</i>
							1*	Diptera	Ephydriidae
							2	"	Piophilidae
							1	Hymenoptera	Formicidae
							1	"	Platygasteridae
							1	Lepidoptera	(leg of moth)
SW	20	42° 36'	149° 50'	43° 58'	150° 40'	1	Psocoptera	(head)	
						1	Blattaria	(leg)	
						1	Coleoptera	(antenna)	
						1	Diptera	Phoridae—leg, wing	
						1	Homoptera	(exuviae)	
SW	18	42° 43'	149° 58'	44° 26'	151° 0'	1	Coleoptera?	(antenna)	
						3	Hymenoptera	Formicidae	
						1	Diptera	Acalyptr.	
						1	Hymenoptera	Formicidae	
						1	Diptera	Phoridae (wings)	
						1	"	" (legs)	
						4	"	"	
						2	Hymenoptera	Formicidae (abdomen)	
						1	"	(hind wing)	
						1	Hemiptera	(exuviae)	
2. XII.	SW	16	43° 58'	150° 40'	46° 20'	152° 18'	2	Diptera	(legs)
							1	" ?	
3. XII.	var.	4	48° 30'	154° 0'	50° 48'	155° 44'	1	Hymenoptera	Formicidae
9-10. XII.	NNW	20	54° 30'	159°	(leeward Macquarie)		1	Acarina: ?	?
					1	Diptera	Coelopidae		
					1	"	Piophilidae		
13. XII.	NW	36	47° 20'	154° 20'	47°	153°	1	Hymenoptera	Formicidae
							1	Diptera	Piophilidae
14. XII.	NNW	15	44° 40'	151° 53'	43° 10'	149° 20'	3	Diptera	Piophilidae
							4	Hemiptera	Aphididae
							1	Diptera	?

(Table 1, continued)

Date	Wind Direc- tion (knots)	Speed	Starting S. Lat.	E. Long.	Ending S. Lat.	E. Long.	No. Speci- mens	Order	Family
1960							1	Hymenoptera	Formicidae
							2	Thysanoptera	?
							3	Diptera	Ephydriidae
							1	"	leg of Coelopidae
							1	Homoptera	(exuviae)
15.XII.	var.	2	42° 50'	150° 10'	40° 50'	148° 10'	3	Homoptera	Aphididae
							2*	Neuroptera	Hemerobiidae
							2	Diptera	Tipulidae
							1	"	Cecidomyiidae
							1	"	Chironomidae
							4*	"	Drosophilidae
							4	"	Piophilidae
15.XII.	var.	1	40° 50'	148° 10'	39° 0'	145° 20'	4	Homoptera	Aphididae
							2*	Neuroptera	Hemerobiidae
							5*	Diptera	Tipulidae
							2	"	Chironomidae
							1	"	Piophilidae
							1*	"	Ephydriidae
							3	"	Ceratopogonidae

* Alive

flying nets on land consisted of arranging the bamboo frames in series instead of in single frames as previously (*Pac. Ins.* 2: 246, fig. 1a). Longer bamboo poles were used, with two poles forming an inverted "V" at each end of each series, besides the usual cords or wires for keeping frames in position. Thus a series of frames was arranged in a long transverse row, with the second pole of one frame forming the first pole of the next frame, etc.

Procedure: Land trapping was done at Cape Hallett, N. Victoria Land (Wise), on the southwest side of Ross Island, McMurdo Sound (Sedlacek and Wise), on the Danco Coast of Palmer Peninsula (= Graham Land) and on Deception Island, South Shetland Islands (Leech and Leech). Because of various adverse conditions of blizzards, strong winds, heavy snow and detention of personnel on side-trips by adverse weather, the total volume of air effectively screened by nets ashore was only about 0.25 cubic kilometer.

Ship trapping was done on the *Magga Dan* between Melbourne and Macquarie Island and return (Gressitt); on the U.S.S. *Arneb* out of Port Lyttleton, near Christchurch, New Zealand, towards McMurdo Sound (Sedlacek); and on the U.S.S. *Glacier* between the South Shetland Islands and Rio de Janeiro, via the South Sandwich Islands and Montevideo (Leech and Leech). The material trapped north of the Southern Ocean is not reported here. Only about 0.08 cubic kilometer of air was screened in the ship traps because of the short periods spent aboard ships, and adverse weather. The trapping on the U.S.S. *Arneb* of 11 February was partly in the harbor of Port Lyttleton. From 15 to 23 nets of 75 cm diameter were operated on the *Magga Dan*, and a slightly smaller complement on the *Arneb*.

Results: The trapping results are presented in Tables 1-2. A fuller report must be given later, when the insects are identified to species. About 64 insects were taken more than 200 km from land. The southernmost insects taken were three beetles (Lathridiidae) near McMurdo Installation (1-2. XI, Sedlacek). There is the possibility that these had gotten

Table 2. Trapping of air-borne insects aboard U. S. S. Arneb (Sedlacek).

Date	Starting		Ending		No. Specimens	Order	Family		
	S. Lat.	E. Long.	S. Lat.	E. Long.					
11. II.	Port Lyttleton				6	Coleoptera	Lathridiidae		
	43° 15'	172° 45'	43° 46'	173° 16'			Coccinellidae		
							1	"	Anthicidae
							2	Araneida	Agelenidae? (1-spiderling)
							1	Thysanoptera	Thripidae
							1	Psocoptera	Caeciliidae
							10	Heteroptera	Lygaeidae sp. 1
							3	"	" sp. 2
							35	Homoptera	Aphididae sp. 1
							5	"	" sp. 2
							2	Diptera	Cecidomyiidae
							2	"	Ceratopogonidae
							1	"	Chironomidae
							1	"	Sciaridae
							1	"	Lonchaeidae
							2	"	Leptoceridae
							2	"	Ephydriidae
							2	"	Agromyzidae sp. 1
							2	"	" sp. 2
							5	"	Drosophilidae sp. 1
				2	"	" sp. 2			
				3	"	Acalypteratae			
				15	Hymenoptera	Braconidae near <i>Lysiphlebus</i>			
				1	"	Braconidae sp. 2			
				1	"	Figitidae: Figitinae			
				2	"	Pteromalidae 2 spp.			
				3	"	Eulopidae sp. 1			
				1	"	" sp. 2			
11-12. II.	43° 46'	173° 15'	47° 55'	173° 15'	1	Coleoptera	(leg)		
							2	Homoptera	Aphididae
							1	Diptera	Milichiidae? (thorax)
							1	"	leg (acalyptrate)?
					1	Hymenoptera	Figitidae: Figitinae		
12. II.	47° 55'	173° 15'	53° 30'	173° 00'	1	Coleoptera	(elytra)		
14-15. II.	62° 00'	172° 10'	62° 30'	172° 00'	1	Acarina: ?	(mite)		

into the nets in New Zealand as they were taken at the beginning of the season. On the other hand, the wind at the time they were found in the nets was from the NE, which seems significant, as well as being unusual for the area. The next most southern records were two *Collembola* trapped on Deception I., S. Shetlands (4. II, Leech & Leech), and the next well south of New Zealand (a mite) and in the lee of Macquarie I. (a local fly and a mite).

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