

**Report for the Davis Expedition Committee of the Royal Botanic Garden
Edinburgh (RBGE)/ Kebun Raya (KR) Joint Expedition to Sulawesi, 24 March-3
May 2002**

Abstract:

A botanical field trip to North Sulawesi was undertaken in conjunction with staff of the Kebun Raya, Bogor, Indonesia. The aim of the expedition was to collect both living and herbarium material of families of research interest to both institutions, primarily Gesneriaceae, Zingiberaceae and Ericaceae, as well as undertaking general herbarium collecting, in multiple sets, of material of interest to Bogor, RBGE and other institutions working on the Flora Malesiana project. My main objective on the expedition was the targeted collecting of material of *Cyrtandra* (Gesneriaceae) for the preparation of an account of the *Cyrtandra* flora of Sulawesi. Fifteen collections, of herbarium, spirit and DNA material, of *Cyrtandra* were made. Three of these are undescribed. In total, two hundred and sixty herbarium collections were made and one hundred and fifty nine living collections. The top set of all herbarium material was deposited in Bogor and a second set, where possible, was also left for distribution to the regional herbarium in Manado. A selection of the living material collected was left at Cibodas Botanic Garden in Java to be grown for future research and display. All other material, living and herbarium, was taken to RBGE for research and distribution.

HANNAH ATKINS

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A botanical field trip to North Sulawesi was undertaken in conjunction with staff of the Kebun Raya, Bogor, Indonesia. The aim of the expedition was to collect both living and herbarium material of families of research interest to both institutions, primarily Gesneriaceae, Zingiberaceae and Ericaceae, as well as undertaking general herbarium collecting, in multiple sets, of material of interest to Bogor, RBGE and other institutions working on the Flora Malesiana project. Five weeks were spent in Sulawesi, mostly in the northern province of Gorontalo. Earlier plans to collect in Central Sulawesi had to be altered due to problems in Poso. Ascents of two mountains, Gunung Gambuta and Gunung Ali, in the Nani Wartabone National Park were undertaken, and of a third mountain, Gunung Biolihutu outside of the Park boundaries. Lowland collecting was also carried out in two localities, at the Cagar Alam Panua and at Lombongo in the Nani Wartabone National Park. In total, two hundred and sixty herbarium collections were made and one hundred and fifty nine living collections. The top set of all herbarium material was deposited at the Herbarium Bogoriense and a second set, where possible, was also left for distribution to the regional herbarium in Manado. A selection of the living material collected was left at Cibodas Botanic Garden in Java to be grown for future research and display. All other material, living and herbarium, was taken to RBGE for research and distribution.

My main objective on the expedition was the targeted collecting of material of *Cyrtandra* (Gesneriaceae) for the preparation of an account of the *Cyrtandra* flora of Sulawesi. Fifteen collections, of herbarium, spirit and DNA material, of *Cyrtandra* were made. Three of the species collected are undescribed. These new species will be described and illustrated in the flora account. The DNA samples will be sequenced and added to those already held at RBGE to produce an evolutionary history of the genus in the region, an invaluable tool for considering biogeographic patterns in this complicated region. One of the undescribed species was also successfully brought back to the garden as living material and is currently in quarantine. Seed of a further five *Cyrtandra* collections was brought back for future propagation.

The expedition was very successful and it is hoped that it will be possible to continue to work collaboratively with the Kebun Raya in this way in the future.

Itinerary:

23 Mar	Depart Edinburgh
24	Arrive Jakarta , collected at airport and taken to Bogor
25	Meeting with Dr D Darnaedi, Kebun Raya. Visits to LIPI offices and Police to obtain necessary permits.
26	Meeting with Dr Irawati (Herbarium Bogoriense); working in Herbarium.
27	Visit to Cibodas Botanic Garden
28	Expedition preparation; herbarium work
29	Herbarium work.
30	Final preparations for fieldwork
31	Flight from Jakarta to Manado via Makassar

1 April	Manado: visit to Forestry Office for permits; transport arrangements
2	Drive to Kotamobagu to visit Nani Wartabone National Park Head Office for permits and then on to Limboto
3	Arrive in Gorontalo , shopping for supplies and then on to Tulabolo (last village accessible by car before Gunung Gambuta)
4	In Tulabolo - arranging porters and collecting in forest near village
5	Walk from Tulabolo to Pinogu (last village before Gunung Gambuta)
6	Arranging porters and clarifying route for 9 day trip to Gunung Gambuta; collecting in forest near village
7	Leave for Gunung Gambuta – walk to camp 1 with some collecting in lowland rainforest en route.
8	Walk to camp 2 – collecting around camp
9	Walk to camp 3 (base camp) at c. 900 m; collecting round camp
10	Collecting on Gunung Gambuta to c. 1450 m
11	'Fly camp' set up at c.1500 m in preparation for reaching summit the following day; collecting around fly camp in afternoon..
12	Final ascent to summit of Gunung Gambuta (1954 m).
13	Return to camp 2
14	Return to Pinogu
15	Walk from Pinogu to Tolabolu and drive back to Gorontalo
16	In Gorontalo
17	In Gorontalo
18	Drive to Desa Popaya and stay in Forestry hut on edge of Cagar Alam Panua (nature reserve)
19	Collecting in lowland rainforest in Cagar Alam Panua and drive back to Gorontalo
20	In Gorontalo
21	Drive to Bululi (last village accessible by car before Gunung Boliohutu)
22	Walk to camp 1; collecting around camp
23	Collecting from camp 1 to c. 650 m
24	Walk to camp 2; collecting around camp
25	Camp moved back to original position (not enough water at camp 2); collecting to c. 1100 m
26	Camp 1 flooded as a result of two days of heavy rain – retreated to hut on higher ground
27	Return to Bululi then Gorontalo and then on to Tumbulilato (last village to arrange porters and supplies for ascent of Gunung Ali)
28	Begin ascent of Gunung Ali – heavy rain caused rivers to flood. Too dangerous to continue. No prospect of change in situation, returned to Tumbulilato and then back to Gorontalo
29	In Gorontalo – sorting specimens
30	Collecting in lowland forest in Lombongo in Nani Wartabone National Park
1 May	Drive to Manado
2	In Manado – packing specimens
3	Flight to Jakarta via Makassar; thence to Bogor
4	In Bogor
5	Drive to Cibodas Botanic Garden
6	Collecting on Gunung Gede
7	Workshop on Gesneriaceae, Zingiberaceae and propagation methods to staff

	at Cibodas
8	Air freight of herbarium specimens to UK
9	Visiting BIOTROP; return to Edinburgh

Collections

Attached is a list of the collections in numerical order giving the scientific name to species' level where known, otherwise, the family and/ or genus is recorded.

.SPECIMENS	COL	FAMILY.....	NAME.....
165608	1	ASCLEPIADACEAE	Hoya
165646	2	BEGONIACEAE	Begonia
165649	4		
165650	5	CELASTRACEAE	
165651	6	COMMELINACEAE	
165654	9	ZINGIBERACEAE	Amomum
165655	10		
165656	11	GESNERIACEAE	Rhynchotechum
165657	12	URTICACEAE	Elatostema
165658	13	ACANTHACEAE	
165659	14	URTICACEAE	
165660	16	ASCLEPIADACEAE	Hoya
165661	17	ORCHIDACEAE	Cleisostoma
165663	19	EUPHORBIACEAE	Mallotus
165664	20	EUPHORBIACEAE	Macaranga
165728	21	PIPERACEAE	Piper
165729	22	MORACEAE	Ficus
165730	23	ARACEAE	
165741	24	MORACEAE	Ficus
165742	25	LEGUMINOSAE	
165743	26	CECROPIACEAE	Poikilospermum
165744	27	RUBIACEAE	Myrmecodia
165746	29	URTICACEAE	Elatostema
165748	30	MELASTOMATAACEAE	
165750	31	ZINGIBERACEAE	Etlingera
165751	32	SCROPHULARIACEAE	Torenia
165752	33	PIPERACEAE	Peperomia
165753	34	ACTINIDIACEAE	Saurauia
165754	35	ZINGIBERACEAE	Alpinia eremochlamys K.Schum.
165755	36	RUBIACEAE	
165756	37	BALSAMINACEAE	Impatiens
165757	38	GESNERIACEAE	Cyrtandra
165759	39	ZINGIBERACEAE	Etlingera
165760	40	GESNERIACEAE	Cyrtandra polyneura (C.B.Clarke) B.L.Burt
165761	41	GESNERIACEAE	Aeschynanthus
165762	42	MELASTOMATAACEAE	Medinilla
165763	43	GESNERIACEAE	Epithema
165764	44	PIPERACEAE	Peperomia
165765	45	CRUCIFERAE	
165766	46	BEGONIACEAE	Begonia
165767	47	VITTARIACEAE	
165768	48	UMBELLIFERAE	Hydrocotyle
165769	49	BEGONIACEAE	Begonia
165770	50	DILLENACEAE	Dillenia
165771	51	GESNERIACEAE	Aeschynanthus
165772	52	GESNERIACEAE	Cyrtandra
165773	53	UNKNOWN	Unknown
165774	54	GESNERIACEAE	Cyrtandra
165775	55	ZINGIBERACEAE	Etlingera
165776	56	GESNERIACEAE	Cyrtandra
165777	57	MORACEAE	Ficus
165779	58	URTICACEAE	Elatostema
165780	59	GUTTIFERAE	Garcinia
165781	60	ZINGIBERACEAE	Alpinia cylindrocephala K.Schum.
165782	61	ERICACEAE	Diplycosia
165783	62	ZINGIBERACEAE	Amomum gymnopodium K.Schum.
165784	63	MELASTOMATAACEAE	Sonerila
165785	64	MELIACEAE	Chisocheton
165793	65	RUBIACEAE	

.SPECIMENS	COL	FAMILY.....	NAME.....
165794	66	THYMELAEACEAE	
165795	67	ARALIACEAE	
165796	68	ZINGIBERACEAE	Alpinia eremochlamys K.Schum.
165798	70	GESNERIACEAE	Agalmyla
165799	71	RUBIACEAE	
165800	72	EUPHORBIACEAE	
165801	73	UNKNOWN	Unknown
165802	74	ZINGIBERACEAE	Amomum gymnopodium K.Schum.
165803	75	RUBIACEAE	
165804	76	MELASTOMATAACEAE	Medinilla
165805	77	MYRSINACEAE	Ardisia
165806	78	MYRTACEAE	Syzygium
165807	79	UNKNOWN	Unknown
165808	80	ZINGIBERACEAE	Amomum brachychilus K.Schum.
165809	81	RUBIACEAE	
165810	82	THEACEAE	
165811	83	MYRISTICACEAE	Horsfieldia
165812	84	VITTARIACEAE	
165813	85		
165815	86	BALANOPHORACEAE	
165816	87		
165817	88		
165818	89	HYMENOPHYLLACEAE	
165819	90	HYMENOPHYLLACEAE	
165820	91	GESNERIACEAE	Cyrtandra
165822	92	ARAUCARIACEAE	Agathis
165823	93	GESNERIACEAE	Cyrtandra
165824	94	ZINGIBERACEAE	Etlingera
165825	95	UNKNOWN	Unknown
165826	96	CYPERACEAE	
165827	97	CAMPANULACEAE	Pratia
165828	98	ERICACEAE	Gaultheria
165829	99	ERICACEAE	Vaccinium
165830	100	MYRTACEAE	
165846	101	MORACEAE	Ficus
165847	102		
165848	103	RUBIACEAE	
165849	104	PODOCARPACEAE	Dacrycarpus
165850	105	ARAUCARIACEAE	Agathis
165851	106	GESNERIACEAE	Rhynchoglossum
165852	106	GESNERIACEAE	Rhynchoglossum
165855	107	BORAGINACEAE	Cynoglossum
165856	108	GESNERIACEAE	Epithema
165857	109	MORACEAE	Ficus
165858	110	COMPOSITAE	
165859	111	CUCURBITACEAE	
165860	112	GESNERIACEAE	Rhynchoglossum obliquum Blume
165861	113	GESNERIACEAE	Epithema
165862	114	GESNERIACEAE	Cyrtandra polyneura (C.B.Clarke) B.L.Burt
165863	115	DIOSCOREACEAE	Dioscorea
165864	116	EUPHORBIACEAE	Mallotus
165865	117	UNKNOWN	Unknown
165867	118	ZINGIBERACEAE	Amomum
165868	119	ARISTOLOCHIACEAE	Aristolochia
165869	120	ARISTOLOCHIACEAE	Aristolochia
165870	121	MENISPERMACEAE	
165871	122	MENISPERMACEAE	
165872	123	EUPHORBIACEAE	Mallotus
165873	124	EUPHORBIACEAE	Mallotus
165874	125	CYPERACEAE	

.SPECIMENS	COL	FAMILY.....	NAME.....
165875	126	ACANTHACEAE	
165876	127	ANNONACEAE	Polyalthia
165877	128	RUBIACEAE	
165878	129	ANNONACEAE	Uvaria
165879	130	FLACOURTIACEAE	
165880	131	APOCYNACEAE	
165881	132	VITACEAE	
165882	133	RUBIACEAE	Mussaenda
165883	134	LEGUMINOSAE	Bauhinia
165884	135	MYRSINACEAE	Maesa
165885	136	CAPPARACEAE	
165886	137	BIGNONIACEAE	
165887	138	ZINGIBERACEAE	Etlingera
165888	139	GESNERIACEAE	Cyrtandra
165889	140	ZINGIBERACEAE	Amomum
165890	141	BEGONIACEAE	Begonia
165891	142	GESNERIACEAE	Cyrtandra polyneura (C.B.Clarke) B.L.Burt
165892	143	ZINGIBERACEAE	Alpinia monopleura K.Schum.
165893	144	ZINGIBERACEAE	Amomum
165894	145	GESNERIACEAE	Rhynchotechum
165895	146	BEGONIACEAE	Begonia
165896	147	VITACEAE	
165897	148	VITACEAE	
165898	149	EUPHORBIACEAE	
165899	150	EUPHORBIACEAE	
165900	151	ICACINACEAE	Iodes
165901	152	VITACEAE	Cissus discolor Blume
165902	153	CYPERACEAE	
165904	154		
165905	155	BEGONIACEAE	Begonia
165906	156	MORACEAE	
165907	157	MYRTACEAE	Syzygium
165908	158	ASCLEPIADACEAE	Hoya
165909	159	MORACEAE	Ficus
165910	160	FLACOURTIACEAE	Hydnocarpus
165911	161	TACCACEAE	Tacca palmatifida Baker
165912	162	ANNONACEAE	
165913	163	GUTTIFERAE	Garcinia
165914	164	LEGUMINOSAE	
165915	165	MORACEAE	Ficus
165916	166	GESNERIACEAE	Aeschynanthus
165917	167	BEGONIACEAE	Begonia
165918	168	RUBIACEAE	
165919	169	ZINGIBERACEAE	Alpinia warburgii K.Schum.
165920	170	PANDANACEAE	Pandanus
165921	171	ACTINIDIACEAE	Saurauia
165922	172	PANDANACEAE	Pandanus
165923	173	GNETACEAE	Gnetum
165924	174	GUTTIFERAE	Garcinia
165925	175	PIPERACEAE	Piper
165926	176	URTICACEAE	Elatostema
165927	177	MYRTACEAE	Syzygium
165928	178	MORACEAE	
165929	179	URTICACEAE	
165930	180	GESNERIACEAE	Epithema
165931	181	PIPERACEAE	Peperomia
165933	182	CECROPIACEAE	Poikilospermum
165934	183	ORCHIDACEAE	Phaius
165935	184	HYPOXIDACEAE	Curculigo
165936	185	LEEACEAE	Leea

.SPECIMENS	COL	FAMILY.....	NAME.....
165938	186	BEGONIACEAE	Begonia
165939	187	MELIACEAE	Aglaia
165941	188	GESNERIACEAE	Cyrtandra
165942	189	BEGONIACEAE	Begonia
165943	190	GESNERIACEAE	Cyrtandra
165945	191	GESNERIACEAE	
165946	192	GUTTIFERAE	Calophyllum
165947	193	ORCHIDACEAE	
165948	194	ORCHIDACEAE	
165949	195	MARANTACEAE	
165950	196		
165952	197	EUPHORBIACEAE	Mallotus
165953	198	RUBIACEAE	Mussaenda
165954	199	MELASTOMATAACEAE	Memecylon
165956	200	EUPHORBIACEAE	
165957	201	RUBIACEAE	Psychotria
165958	202	GESNERIACEAE	Cyrtandra
165959	203	URTICACEAE	Elatostema
165961	204	MORACEAE	Ficus
165962	205	EUPHORBIACEAE	
165963	206	GUTTIFERAE	Garcinia
165964	207	MORACEAE	Ficus
165965	208	URTICACEAE	Procris
165966	209	GESNERIACEAE	Cyrtandra
165968	210	GESNERIACEAE	Agalmyla
165969	211	ZINGIBERACEAE	Amomum gymnopodium K.Schum.
165971	212	ZINGIBERACEAE	
165972	213	OPILIACEAE	
165973	214	LEGUMINOSAE	
165974	215	SOLANACEAE	
165975	216	MORACEAE	Ficus
165977	217	EUPHORBIACEAE	Acalypha
165978	218	GUTTIFERAE	Garcinia
165979	219	RUBIACEAE	
165980	220	BALANOPHORACEAE	
165982	221	MAGNOLIACEAE	
165983	222	FAGACEAE	Lithocarpus
165984	223	ANACARDIACEAE	
165985	224	MORACEAE	Ficus
165986	225	MYRTACEAE	Syzygium
165987	226	RUBIACEAE	Nauclea
165988	227	ANNONACEAE	
165989	228	ZINGIBERACEAE	Etlingera
165990	229	HYDRANGEACEAE	Dichroa
165991	230	VITACEAE	
165992	231	UNKNOWN	Unknown
165993	232	COMPOSITAE	Vernonia
165994	233	UNKNOWN	Unknown
165995	234	UNKNOWN	Unknown
165996	235	ZINGIBERACEAE	Etlingera
165998	236	MELASTOMATAACEAE	
165999	237	BALANOPHORACEAE	
166000	238	SMILACACEAE	Smilax
166001	239	APOCYNACEAE	
166002	240	BEGONIACEAE	Begonia
166003	241	GESNERIACEAE	Boea
166004	242	MORACEAE	Ficus
166006	243	MELIACEAE	Chisocheton
166007	244	VITACEAE	
166008	245	ZINGIBERACEAE	Amomum
166009	246	URTICACEAE	

.SPECIMENS	COL	FAMILY.....	NAME.....
166010	247	ZINGIBERACEAE	Amomum
166011	248	MORACEAE	Ficus
166012	249	MORACEAE	Ficus
166014	250	ANNONACEAE	
166015	251	ZINGIBERACEAE	Alpinia rubricaulis K.Schum
166016	252	GESNERIACEAE	Cyrtandra
166017	253	ACTINIDIACEAE	Saurauia
166018	254	RUBIACEAE	Ophiorrhiza
166019	255	EBENACEAE	Diospyros
166020	256	PIPERACEAE	Piper
166021	257	ASCLEPIADACEAE	Dischidia
166022	258	ASCLEPIADACEAE	Hoya
166023	259	AMARANTHACEAE	
166024	260	MORACEAE	Ficus

254 Rows Processed