

Sulawesi and Halmahera 2017

Oding in the footsteps of Wallace

Led by Phil Benstead (with remote identification consultancy by Rory Dow).

Participants: Jörg Adelman, Erland Refling Nielsen and Michael Post.

Summary

An enjoyable tour with a keen team dedicated to finding and photographing as many odos as possible. The trip was notable for the diversity of chlorocyphids available and the identification problems posed by members of the Platystictidae that we encountered... Sulawesi was superb but was surprisingly eclipsed by the excitement of oding in the seldom-visited Molluccan island of Halmahera. Here we certainly added to the knowledge of the odonate fauna of the island, finding two potential new species for science. Just think what we could have done with a full team! I hope to return in the future.

Acknowledgements

Thanks to the brave tour participants for agreeing to a cut-down tour after we failed to get enough for the thing to run as originally envisaged. Thanks also to Rory Dow for graciously agreeing to identify stuff remotely and being there for Phil at overwhelming moments!

Daily Diary

3/4 to Makassar

Erland and Phil were greeted in the late afternoon by the rest of the team after a marathon journey via Singapore and KL with luggage handling and passport control at both airports... The connection time at KL was ridiculously short but we (and our luggage) made it to a stormy and very wet Sulawesi intact if frazzled. Mikael and Joerg had made a much better and easier choice of flights but they had no luggage on arrival... C'est la vie. First job was buying them some emergency raingear, as it really looked like we might need it after two full days of rain before our arrival. We dined at the hotel for convenience and the weather forecasts for the two weeks looked very bad, we went to bed slightly despondent about our future prospects.

4/4 Bantimurung-Bulusaraung NP and Sungai Pattunuang Asue

We need not have worried about the weather though because after a cloudy start, the sun got going. But we did have to deal with rivers and streams choked with two days of rainwater, running high and dirty. Our first odonate of the day though came from the van when stuck at lights in Makassar itself. A single female *Macrodiplox cora* perched on a roadside barrier. Game on!

Driving into the Bantimurung-Bulusaraung NP we sorted out the entrance fee and walked through the gate. Immediately we were faced with roosting *Neurothemis* and our first high-value Chlorocyphid appeared – a female *Libellago asclepiades*. Just a few metres on we found our second – *Rhinocypha monochroa*. KER-CHING! A stunning and rather elegant species. A *Nannophlebia agliae* toyed with us and never showed well. The park is famous for its butterflies and we saw some wonderful species during the day including a few endemic swallowtails.

Dragonflies were not flying in the cool weather but just hanging about roosting and we found our first *Potamarcha congener* behind the toilet block. Darker, damper seeps had our first *Teinobasis helvola*, our jet-lagged eyes finding them almost impossible to follow in the gloom of the understory. As the sun started to shine we had a quick look at the ponds along the entrance track and padded our list out with some widespread species, mostly libellulids but also our first *Pseudagrion microcephalum* and *Ischnura senegalensis*. A pair of egg-laying *Hydrobasileus croceus* were most welcome here. *Orthemis serapia* was new for all of us and we enjoyed our first flutterer (the very widespread *Rhythemis phyllis*).

After lunch we headed back into the park and walked the trail above the waterfall. This was rather quiet for odonates, although some of us saw a patrolling male *Epopthalmia australis*. Back down below the falls we found our first male *Libellago asclepiades* and another brief *Nannophlebia*. Mud-puddling swallowtails and nymphalids were amazing here. Our first

mammal, the endangered moor macaque (*Macaca maura*), appeared in trees above us at one point and walking back we found the rest of the troupe. A great primate to see.

Our last stop of the day was a recce at the nearby Sungai Pattunuang Asue. This site looked good and we found our first *Celebothemis* here. Juvenile Sulawesi sailfin lizards pattered across the river when startled. Erland and Phil bumped into our first gomphid before we headed back – the endemic *Paragomphus capitalis*. We determined to return in the morning weather permitting.

5/4 **Sungai Pattunuang Asue and Bantimurung-Bulsuraung NP**

We returned bright and early to the Sungai Pattunuang Asue and spent a strenuous morning climbing upriver and chasing odonates. The sun was out and the water levels in the river were dropping nicely this morning. On arrival it was clear that there were a lot of patrolling *Ictinogomphus celebensis* along the river. They were pairing up fast and scooting into the forest together and before we knew it they had all vanished. Sadly we failed to get any on our side of the river and had to be content with long-range work with big lenses. *Trithemis festiva* was new here too at the start of the walk.

Walking two kilometres upstream we eventually found our target species – the chorocyphid *Libellago rufescens*. It was distant but Phil later found another much closer for good photos. Walking back we found our first *Diplacina* and Allin found us a superb Sulawesi bear cuscus – like an amazing arboreal wombat with a prehensile tail! Others saw an adult male Sulawesi sailfin lizard (*Hydrosauurus celebensis*) – what a monster! Now we know what happened to the dinosaurs! Some of us managed to photograph the *Paragomphus*.

After lunch we worked the ponds near the park again but found only *Agriocnemis pygmaea* to add to our list. A *Macrodiplax* here sat well for photos though. Back in the park we had chances for more photography of species already seen but hot and tired the team elected for an early shower. If only the hotel had considered putting towels in our rooms...

6/4 **Kampong Marang ponds and up the hill towards Celebes Canyon**

This morning we decided to explore further afield and drove for two hours before stopping in an area of fallow rice fields and fish-ponds. Here we quickly connected with a few of the missing widespread species to be expected hereabouts, including our first *Agriocnemis femina*, *Brachythemis contaminata* and *Brachydiplax chalybea*. A nice surprise was a single *Urothemis bisignata*, known in Sulawesi only from a few unpublished specimen records. Our first striking *Pseudagrion crocops* appeared, regrettably at long-range.

Moving on we drove up into the limestone hills, lovely scenery with hill rice and karstic canyon sides. We headed for our highest site and drifted slowly down through the afternoon, picking up lunch en route. At the highest and arguably best site we searched for *Disparocypha* but I suspect the heavy overcast weather may have impacted on our success, as we did not find any. Missing this monotypic endemic genus was a blow... Here though were more confusing *Diplacina* and at last the simply superb *Neurobasis kaupii* – a glorious bright blue affair that displayed to a passing female like a demented peacock. Michael flushed an egg-laying female *Heliaeschna filostyla*, which fortuitously landed in front of Phil for confirmatory photos.

Dropping down we tried a succession of smaller, darker streams and found *Protosticta pariwonoi* on two of them. Another roadside stream produced a close encounter with our first *Pseudagrion ustum* – another colourful member of the genus. Our last stop produced more *Libellago rufescens* and *Rhinocypha monochroa*. A great session but the long drive back to the hotel was arduous!

7/4 **Makassar to Palu and up the coast to Donggala**

Today was largely a travel day as we relocated with Allin to Palu, ahead of the drive into Lore Lindu tomorrow. The flight allowed a leisurely start and took up most of the morning. After getting back into field gear we had a fishy lunch and drove up the coast to check the mangroves for *Raphismia*. We tried hard but only found *Pantala*, *Potamarcha* and *Diplacodes trivialis* during a hot session at sea-level in the blazing sun. Dinner was taken at another 'pick-your-own-fish' restaurant as we made the most of the fine dining available before heading into the more austere accommodation and catering of the mountains.

8/4 to Wuasa

Today we drove uphill into Lore Lindu NP and stopped multiple times at likely-looking spots. Before we started climbing we stopped at a small river that produced a few birds and our first *Pseudagrion crocops* of the day, they were to be frequent. Climbing higher we stopped at a lovely shallow, sandy-bottomed stream that was busy with *Libellago xanthocyana* and also produced more *crocops*, *Celebothemis* and our first *Orthetrum pruinosum* of the day.

Our next stop produced excellent photo opportunities with *Pseudagrion ustum*. We quickly picked up some lunch to eat in the field and drove to the bridge at Dongi-Dongi to eat it. Here we found some small ponds that produced our first *Orthetrum glaucum* and another *Trithemis festiva* and the river had *Neurobasis kaupi*. Finally in the early afternoon we entered forest, even though we had technically been in the park for sometime. Our first proper forested stream stop quickly produced our first amazing *Sclerocypha bisignata* and there were more *Neurobasis* here too. The *Sclerocypha* were very flighty, taking to the trees at the slightest provocation but eventually Michael found one perched out by the road in the sun and we blazed away with our cameras.

Our last stop was at a small roadside seepage wetland that produced our first *Lestes praemorsus* and *Argiocnemis rubescens* (the interesting subspecies *lunulata*), as well as a large colony of *Argiocnemis femina*. Arriving at the guesthouse we settled into our simple rooms and met the cook (who had travelled on ahead of us with our provisions). Dinner was a splendid affair as we had brought fresh fish with us from Palu. Afterwards we went looking for Sulawesi masked owl but rain stopped play...

9/4 Lore Lindu

Light drizzle greeted us this morning, so we had a late and rather leisurely breakfast and departure and as we drove to the distant forest edge the sun slowly got it together. Arriving in the forest we failed to find any significant habitat for some time but walking revealed a few micro-streams and roadside pools. One small pool had our first *Agrionoptera insignis* and a lot of *Lestes praemorsus*. Behind here a muddy trail/occasional stream in the forest had some pools, two of which were guarded by grey female *Teinobasis*, a yet-to-be-described species.

Dropping down we stopped at river and were pleased to spot a new *Libellago (celebensis)*, which posed nicely for photographs. Next a small pool and its overflow in open bracken fields produced a grey male *Teinobasis* and a high-altitude *Acisoma*. Being far from our guesthouse we took an emergency lunch in the next village we came to, Ika cooking up stuff we bought in the village shop in the house next door! Overhead a cracking Sulawesi honey buzzard.

What remained of the afternoon was spent walking small streams and stopping at bridges to look at larger rivers. We found a small number of *crocops* and *kaupi* to add to our day-list but nothing new. The rain started as we motored home and poured down through the evening.

10/4 Lake Taming and along the road towards Kamarora

The rain did stop overnight unlike the relentless Easter hymns... Blurry-eyed we headed out into an overcast day that delivered sun occasionally and also rain... We soldiered on though. First stop was the lake where we were pleased to see a few *Nannophya pygmaea*, they looked bigger (!) than Malaysian ones (perhaps a different species?). Also here plenty of *Acisoma* and *Argiocnemis femina*. The birding was good here with a nice flock of mostly endemic birds.

With no sun in sight we headed downhill to find some and worked the roadside streams, rivers and seeps. During the rest of the day we found two new *Protosticta* with careful searching and spent ages photographing them and we also encountered several examples of the mystery grey *Teinobasis* from yesterday. A huge brown *Anax/aeshnid* / thing? cruised the road at one point – oh for a net.

Driving home we stopped at a village pond for a single *Brachydiplax chalybea*.

11/4 driving back down to Palu

Today we elected to drive slowly back to Palu and visit another camera shop (Erland was going through lenses like nobody's business...). Our day in the field was one of the most enjoyable of the trip so far. We stopped again at Dongi-Dongi for *Neurobasis kaupi*. Searching

a high, dark stream produced a new *Protosticta* and here for the first time we found several individuals with 4-5 males and a female in a short search.

Dropping down we took the short-cut to Kamarora along a rough road through very rural Sulawesi. The first stop we made produced odo-gold when Ika found us a superb *Celebargiolestes orri* – this recently-described species was high on our most-wanted list and was easily the best Odonate seen on the tour to date. Also here more grey *Teinobasis*, the *Protosticta* from earlier, *Libellago celebensis* and a fleeting encounter with a roosting male *Gynacantha*. Joerg's fall climbing out of one of the stream beds was spectacular but brought no lasting damage thankfully. We checked further streams without adding to the species count before finally stopping once again low-down at the *Libellago xanthocyana* site for more photos of this delightful species.

12/4 to Manado...

A midday flight meant we had plenty of time to relax this morning before being shuttled to the airport by our South/Central team. We were being handed on in Manado to a new team! Our original early morning direct flight had morphed into a three-flight shuttle in the same aircraft, so we saw Luwuk and Gorontalo on the way. Once we had learned the hard way not to leave the aircraft it was just a matter of patience...

A late arrival meant we had little time after check-in except to head for a restaurant for a very spicy meal... Phil tried to make amends after with Magnums and Chocopies all round from the supermarket and we went to bed in noisy but friendly Manado.

13/4 Tunan Waterfall (North Sulawesi)

Our North Sulawesi guide, David picked us up at 0715 for the hour-long drive to the waterfall. The sun blazed down at the start but we got some mixed cloud and an occasional scattering of rain later but nothing to inconvenience.

We had been eagerly anticipating this day as it presented an opportunity to see a number of exciting species for the first time. A quick stop at some ponds under coconuts produced a teneral *Zyxomma petiolatum*. Taking the path to the waterfall it did not take long before a teneral flatwing (*Celebargiolestes cincta*) landed on Joerg. We were to see many of these splendid things over the morning session. Walking into the falls we also found plenty of confusing grey *Teinobasis* and a few small-looking *Diplacina*. A small swampy area had a few different things including the diminutive *Nannophya*. The river below the 40-m falls produced our first *Libellago daviesi* and *Rhinocypha frontalis* – two new chlorocyphids and *Libellago xanthocyana* was flying here too! Dropping down again David found us the ever-hovering *Nososticta flavipennis* and we spent some time photographing this and other stuff in a small stream. Michael saw the only *Paragomphus* of the day along the main river...

David promised a quick lunch but it being the first day of the Easter holiday things took a bit longer than we would have liked. Back at the coconut pond we were treated to a large *Anax*, which was patrolling one of the ponds. There were a good numbers of *Zyxomma* on the wing here too that were frustrating to photograph...

14/4 to Halmahera, via Ternate, and oding around Sofifi

Today we were up very early for a flight to the island of Ternate that was eventually rescheduled, meaning we could have had another hour in bed! Mahar our new guide met us in Ternate and shuttled us to the speedboat port for the 40-minute run over to Halmahera. En route a small group of long-beaked common dolphins.

After check-in in a simple hotel in Sofifi we ate an early lunch and headed out into the blistering heat to look for coastal ponds and streams and see our first Halmahera odonates. Mahar took us to a riverside wetland. The river was out of bounds because of estuarine crocodiles but the ponds here produced our first *Rhyothemis replendens* – a superb libellid. Next up was a linear pond with slight flow below coconuts that produced a new *Brachydiplax (duivenbodei)* and an unexpected *Rhodothemis (nigripes)*. Lastly we worked another much better, shaded linear pond behind a school, which produced some great new libellids too with plenty of *Tetrathemis leptopera* and a female *Neosoxenia mysis*. Both sombre kingfisher and common paradise-kingfisher were most welcome here. On the way back to the hotel we stopped at the mangrove boardwalk for a quick look for *Raphismia* but again no joy...

15/4 to Subaim and beyond to Foli

Another long day travelling across the island with the occasional stop. Our first stop about an hour-and-a-half from Sofifi netted us our ninth and last species of chlorocyphid – *Rhinocypha tincta*. Also also here our first *Selysioneura thalia* – representing a new family for all of us. This was the last of the forested, hilly country as we quickly dropped down to the coast and stayed on or close to it for the rest of the journey.

Reaching the gate to the Akatejewa Lolobata NP, after two-and-a-half hours, we bumped and slid down the track for about a kilometre before we reached a great pond and a roadside ditch with abundant *Ictinogomphus*. We had been told to expect *australis* on Halmahera but this species did not look like it! [Rory later confirmed it as *leifincki* – a very justifiable split from *australis*] The pond produced a good crop of libellulids but Michael stole the show by finding our first *Nososticta exul*.

Working various stream and rivers produced many more *Nososticta* and *Rhinocypha* but nothing new for our list. We lunched late on chicken rice and then headed for the Foli Road past Subaim. Here a small stream produced more of the same but then Phil fluffed up the first *Huonia (rheophila)* – identified later from photos... [we were to see many more the next day luckily]. Overhead huge Blyth's hornbills powered over noisily.

Back at our hotel in Subaim we ate an enormous fish-and-chips blowout meal and rested up ahead of what was sure to be a strenuous day in the field.

16/4 Foli Road and Buli River

Today we had a quick look along one of the large rivers close to the village but we found no macromids or anything of note. A grey-tailed tattler was nice though and an eclectus parrot blasted through at one point. Leaving the river we drove up Uni-Uni Mountain, eventually getting into good forest and so we started looking for odes. The first stop produced more *Selysioneura* and finally a *Drepanosticta (sembilensis)*. The main river produced more *Huonia rheophila* and Joerg found our first *Palairgia perimecosoma* – all abdomen and short wings. Our first short shower hit us here and we had a few more during the day but nothing serious.

Further uphill we stopped again and this time we found *Diplacina phoebe*, a species many of us had ogled on the internet prior to leaving Europe. Seeps and springs higher up produced *Orthetrum glaucum* and more excitingly *villosovittatum*. We photographed *Huonia* religiously through the day, even though they all looked the same and sure enough when we got back *daphne* was in the bag too from the smaller, shaded sidestreams!

Lunch was taken at a small roadside shelter and afterwards we climbed a rocky sidestream and Joerg found us another *Palairgia (tanysiptera)*. It was a very smart female. For the final part of the afternoon session Phil determined to walk downhill and search small seeps and roadside gullies hoping for a flatwing and guess what... A rather bent female flatwing was added to the list, hunting in a dark roadside culvert. [Vincent Kalkmann later confirmed this to be the first record of a flatwing from the island and almost certainly involving a species new to science]

After dinner Phil spent a frustrating hour with the Indonesian team trying to tape lure in a responsive but invisible Moluccan owlet-nightjar but he did come away with great views of Moluccan scops-owl. Overhead the night sky was spectacular.

17/4 the journey back to Ternate, via the "grebe" pond

Phil's planned pre-dawn excursion for the standard-wing was scuppered by a driver no-show, an unusual fumble in the organisation of the tour to date. But we took a regular car and found a nice Halmahera boobook for our troubles and watched the sun rise.

The long 5-hour slog back to Sofifi and then on by speedboat to Ternate was a necessary evil today if we were to get back to Sulawesi and we elected to spend the two hours before midday at a small roadside pond about half-way back. This proved to be a great idea and we quickly amassed a number of novel species including another one that may ultimately prove rather interesting.

First up there were a number of damselflies escaping the heat under the fringing trees including a red *Teinobasis rufithorax*. Over the pond more *Anax* swooped. Excitingly we were

visited by an egg-laying *Camacina gigantea* and later two males joined in the fun but were very difficult to photograph. [The first record for Halmahera of this species.]

Around our feet tiny *Xiphiagrion* scuttled about low to the water. A *Lestes quercifolius* here was a new species. Amongst the numerous *Tramea transmarina*, Phil spotted a different libellulid that confused us for a long time until Rory (via remote link) identified it as our only *Hydrobasileus brevistylus* of the trip. A spectacular species in many ways, we saw both males and females. Finally when the sun was blazing down Phil spotted the first of several *Rhyothemis*. This one with monotone but fully-pigmented wings! What was it? Not *regia* or *resplendens*. Had we found something new? [Rory is on the case... it seems likely to be an undescribed species though]

That just left the rest of the journey broken by lunch and the occasional comfort stop and then a bumpy speedboat ride back to Ternate and the palatial comfort of our hotel. Before we got to the hotel we stopped at a small lake but only succeeded in seeing more *Teinobasis rufithorax* and a few commonplace species. Phil 'captured' a superb large libellulid exuviae for Joerg's growing collection – perhaps *Camacina*?

18/4 back to Sulawesi and on to Tangkoko

Today we said goodbye to Mahir who had looked after us so well on the Ternate/Halmahera leg of the trip. Our relaxed late-morning start at the hotel soon descended into chaos when we got to the check-in desk to find our flight had been rescheduled three hours later than the time on the ticket... We found some wifi and coffee and tea and waited it out in the unchilled airport hoping that David had more warning than us and was not waiting at the other end...

Our departure was further delayed by a tropical downpour that trapped the passengers on the incoming plane. It took 45 minutes and many umbrellas to get them off the plane out on the tarmac and into a microbus that shuttled back-and-forth in a demented fashion. Eventually we boarded and four hours late we finally arrived in Manado. We gained an hour on landing of course because of the time difference but we were finally hungry after the huge breakfast and David stopped to buy cakes, pasties and sticky rice to fill the void. The two-hour drive to Tangkoko was largely through uninspiring habitat so we kept driving and eventually we arrived at our accommodation half-an-hour before dusk and settled in for the last three nights of the tour.

19/4 Tangkoko area

The penultimate day arrived and we knew we would have our work cut out finding new species after so long in the field. In the end though we had an enjoyable day. Mede had been scouting suitable locations for us and came up trumps during the morning session. A river bend heavily impacted by a recent cyclone provided a variety of habitats and produced *Libellago xanthocyana* and a few other familiar species.

A nearby coast road produced some nice swampy habitat and the occasional pond. Phil finally found a female (teneral) *Gynacantha* at the first swamp (still unidentified..). A second swamp netted us our first Sulawesi *Tetrathemis* and *Brachydiplax duivenbodei*. As the sun started to really heat up the day the *Rhyothemis phyllis* swarmed at tree-top height in flocks of up to 50 – an engaging spectacle but difficult to photograph! One last pond had a male *Anax*. Finally we headed for lunch back at our hotel before heading out again to look for swamps.

In the afternoon we walked away from the road, crossing small streams that offered *Teinobasis* species but we never did get to a swamp. Although we were tired and drained after a day in the field in very hot and humid conditions we still had the energy to do a final late afternoon walk into the park for the tarsier show. Sure enough two little gremlins stared down at us from a tree hole roost and we photographed them. On the way back we had a quick visitation by a superb ghostly male *Zyxomma obtusum* as it investigated a large muddy puddle in the track.

At dusk whilst Phil was showering the team received the news that the *Zyxomma* were swarming in the village drains and they all went down to look. Something for tomorrow – a challenging species to photograph.

20/4 Tangkoko

Our morning session was spent along the waterfall trail in the park. Good forest this and the streams and rivers produced many familiar species and one hopefully new platystictid (still to be identified...). A tree frog and a toad at the waterfall were exciting for Phil and a displaying male flying lizard was decidedly 'other-worldly'. As we walked out we came across two *Nannophlebia* perched together on some high twigs. Hardly ideal for photography but a better opportunity than that offered at Bantimurung two-and-a-half long weeks ago.

We headed back for lunch but our departure for the afternoon session was delayed by a lively thunderstorm. We headed back down the swamp track but failed to find any decent habitat in the closing hours of the day. The sun did return though and we found our first north Sulawesi *Potamarcha* and a river that looked like it might have had potential earlier in the day. A last look at yesterday's swamp allowed us to say goodbye to the diminutive *Nannophya* and a few other species.

That left the frustration of *Zyxomma* photography in Batuputih and for Phil a dusk appointment with Sulawesi nightjar and a handful of frogs triggered into action by the afternoon downpour.

21/4 Tangkoko

Only Phil got up at dawn to track the macaques and spent a pleasant half hour as part of the troupe. Then it was packing, breakfast and the short journey to the airport, with a short stop to buy Joerg the Magnum Phil owed him, and then either home to Europe or onto Australia depending on your inclination.

Odonata recorded in Sulawesi between 4th and 21st April

<i>Lestes praemorsus praemorsus</i>	A few on a roadside seep en route to Wuasa (Central Sulawesi). More in Lore Lindu in suitable habitat. Also one male at Tunan Waterfall (North Sulawesi).
<i>Protosticta coomansi</i>	Lore Lindu (Central Sulawesi) and Tunan Waterfall (North Sulawesi). The species with blue on dorsal surface of s8-9. Endemic to Sulawesi.
<i>Protosticta pariwonoi</i>	A male and a female on the way down the Celebes Canyon Road (South Sulawesi) in small, very dark roadside streams. Endemic to Sulawesi.
<i>Protosticta</i> sp.	Unidentified individuals from Lore Lindu (two species), Tunan Waterfall and Tangkoko. The great frustration of the tour but future work may well deliver up the species involved.
<i>Celebargiolestes orri</i>	Ika found one very obliging individual on our way down out of Lore Lindu – a superb moment with this recently-described species. Endemic to Sulawesi.
<i>Celebargiolestes cinctus</i>	Abundant at Tunan Waterfall (North Sulawesi). Endemic to Sulawesi.
<i>Neurobasis kaupi</i>	A pair seen well at the highest stream visited on the Celebes Canyon Road (South Sulawesi). Frequently encountered in Central Sulawesi Highlands. Endemic to Sulawesi.
<i>Libellago asclepiades</i>	Small numbers encountered at Sungai Pattunuang Asue and Bantimurung-Bulusaraung NP (South Sulawesi). Endemic to Sulawesi.
<i>Libellago celebensis</i>	Recorded past Wuasa and elsewhere at Lore Lindu (Central Sulawesi). Endemic to Sulawesi.
<i>Libellago daviesi</i>	We saw this species in small numbers just below the Tunan Waterfall (North Sulawesi). Endemic to Sulawesi.
<i>Libellago rufescens</i>	We had this species two kilometres up the Sungai Pattunuang Asue and on the way down the Celebes Canyon Road (South Sulawesi). Endemic to Sulawesi.
<i>Libellago xanthocyana</i>	This small species was recorded on a sandy stream low down en route to Wuasa (Lore Lindu – Central Sulawesi). Also recorded at Tunan Waterfall and Tangkoko (North Sulawesi). Endemic to Sulawesi.
<i>Rhinocypha frontalis</i>	Good looks at this species at Tunan Waterfall (North Sulawesi). Endemic to Sulawesi.

<i>Rhinocypha monochroa</i>	Recorded often in good numbers at Bantimurung-Bulusaraung NP, Sungai Pattunuang Asue and on the way down the Celebes Canyon Road (South Sulawesi). Endemic to Sulawesi.
<i>Sclerocypha bisignata</i>	Lore Lindu – Central Sulawesi. A very interesting endemic species.
<i>Nososticta flavipennis</i>	Once we got our eye in there were a few of these at Tunan Waterfall, near Manado. Endemic to Sulawesi.
<i>Argiocnemis femina</i>	Widespread.
<i>Argiocnemis pygmaea</i>	Bantimurung-Bulusaraung NP and Kampong Marang (South Sulawesi). Lore Lindu (Central Sulawesi).
<i>Argiocnemis rubescens lunulata</i>	A few on a roadside seep en route to Wuasa (Central Sulawesi). Also at Tunan Waterfall and Tangkoko (North Sulawesi). This subspecies, <i>lunulata</i> , is a shoe-in for a split surely?
<i>Ischnura senegalensis</i>	Bantimurung-Bulusaraung NP and Kampong Marang (South Sulawesi). Also Palu and Lore Lindu (Central Sulawesi).
<i>Pseudagrion crocops</i>	Glorious but widespread. Endemic to Sulawesi.
<i>Pseudagrion microcephalum</i>	Widespread.
<i>Pseudagrion ustum</i>	Nice close encounter with our first along the Celebes Canyon Road (South Sulawesi). Small numbers en route to Wuasa (Central Sulawesi). Also recorded at both sites in North Sulawesi.
<i>Teinobasis helvola</i>	Bantimurung-Bulusaraung NP, Sungai Pattunuang Asue and along the Celebes Canyon Road (South Sulawesi).
<i>Teinobasis</i> sp. (grey)	A female of the undescribed greyish <i>Teinobasis</i> was observed egg-laying at Sungai Pattunuang Asue (South Sulawesi). Grey <i>Teinobasis</i> were encountered frequently on shaded streams at Lore Lindu (Central Sulawesi) and Tangkoko (North Sulawesi). More than one species may eventually be involved...
<i>Anax guttatus</i>	This species at Tunan Waterfall (North Sulawesi).
<i>Anax gibbulosus</i>	Tentatively identified at Tangkoko.
<i>Gynacantha</i> sp.	Occasional records but none were identified to species.
<i>Heliaeschna filostyla</i>	A very brief egg-laying female at the highest stream we visited along the Celebes Canyon Road (South Sulawesi) was our only encounter. It is unlikely that this species is assigned to the correct genus. Endemic to Sulawesi.
<i>Ictinogomphus celebensis</i>	Seen in good numbers early in the morning along the Sungai Pattunuang Asue (South Sulawesi). Males were watched patrolling and defending short territories along the river before pairing up and flying into the forest. Endemic to Sulawesi.
<i>Paragomphus capitatus</i>	Three seen in two visits to the Sungai Pattunuang Asue (South Sulawesi). Michael also had one at Tunan Waterfall (North Sulawesi). Endemic to Sulawesi.
<i>Epophthalmia australis</i>	One patrolling male above the waterfall at Bantimurung-Bulusaraung NP (South Sulawesi).
<i>Acisoma panorpoides</i>	Very few at Bantimurung-Bulusaraung NP, Kampong Marang (South Sulawesi) and Lore Lindu NP (Central Sulawesi).
<i>Agrionoptera insignis</i>	Recorded by some on the ponds on the approach road to Bantimurung-Bulusaraung NP (South Sulawesi). Lore Lindu (1) – Central Sulawesi. Another at Tunan Waterfall
<i>Brachydiplax chalybea</i>	Recorded at Kampong Marang (South Sulawesi). One at Lore Lindu (Central Sulawesi). More at Tangkoko.
<i>Brachydiplax duivenbodei</i>	One at the Tangkoko swamp.
<i>Brachythemis contaminata</i>	Only recorded on old fishponds at Kampong Marang (South Sulawesi).
<i>Celebothemis delectollei</i>	Seen well at Sungai Pattunuang Asue (South Sulawesi). Also present in small numbers en route to Wuasa (Lore Lindu). Endemic to Sulawesi.
<i>Crocothemis servilia</i>	Widespread.

<i>Diplacina sanguinolenta</i>	Found throughout Sulawesi, all <i>Diplacina</i> photographed were found to be this species on thoracic markings. Perhaps <i>militaris</i> and <i>torrenticola</i> will be located amongst our collective photos when identification features are better known.
<i>Diplacodes trivialis</i>	Widespread.
<i>Hydrobasileus croceus</i>	Pair flying in tandem on the ponds on the approach road to Bantimurung-Bulusaraung NP (South Sulawesi). First record for Sulawesi?
<i>Lathrecista asiatica</i>	A few at Tangkoko (North Sulawesi).
<i>Macrodiplax cora</i>	One in Makassar whilst waiting at lights in the van. Another on the ponds on the approach road to Bantimurung-Bulusaraung NP (South Sulawesi).
<i>Nannophlebia aglaia</i>	Two at Bantimurung-Bulusaraung NP (South Sulawesi). One at Tunan Waterfall (North Sulawesi). Two more at Tangkoko (North Sulawesi). Endemic to Sulawesi.
<i>Nannophya pygmaea</i>	A few seen at the lake at Lore Lindu (Central Sulawesi). These individuals looked rather large compared to Peninsula and Eastern Malaysia specimens... Smaller more typical individuals at Tunan Waterfall and Tangkoko (North Sulawesi).
<i>Neurothemis manadensis</i>	The widespread <i>terminata</i> -like <i>Neurothemis</i> on Sulawesi was this species.
<i>Neurothemis ramburii</i>	Recorded at most sites in South Sulawesi.
<i>Orthetrum glaucum</i>	Recorded on a roadside pond en route to Wuasa (Central Sulawesi). A few at Lore Lindu.
<i>Orthetrum pruinosum</i>	One briefly on the Celebes Canyon road (South Sulawesi). Good numbers en route to Wuasa and at Lore Lindu (Central Sulawesi). This subspecies <i>clelia</i> (together with the Sundaic subspecies <i>schneideri</i>) is probably a good split from mainland forms of <i>pruinsum</i> .
<i>Orthetrum sabina</i>	Just one found in photographs, on the first day at Bantimurung-Bulusaraung NP. Surprisingly hard to find for some reason.
<i>Orthetrum serapia</i>	Widespread and often common in South, Central and Northern Sulawesi sites.
<i>Pantala flavescens</i>	Frequently encountered.
<i>Potamarcha congener</i>	Widespread in South Sulawesi lowlands. A few at one site near Tangkoko.
<i>Rhyothemis phyllis snelleni</i>	Small numbers at South Sulawesi pond sites. Swarming at Tangkoko in large numbers.
<i>Tetrathemis (irregularis) leptopera</i>	A few at the Tangkoko swamp and in the park there too. Split from <i>irregularis</i> by some.
<i>Tholymis tillarga</i>	A dead one near Bantimurung-Bulusaraung NP and one at Kampong Marang (South Sulawesi). One flying during the heat of the day at Donggi-Donggi (Central Sulawesi). Thereafter recorded fairly regularly.
<i>Tramea transmarina euryale</i>	One on the ponds on the access road to Bantimurung-Bulusaraung NP (South Sulawesi).
<i>Trithemis aurora</i>	Only in South Sulawesi at Bantimurung-Bulusaraung NP and Sungai Pattunuang Asue (South Sulawesi).
<i>Trithemis festiva</i>	Sungai Pattunuang Asue (South Sulawesi). One on pond en route to Wuasa (Central Sulawesi). Also at Tangkoko (North Sulawesi).
<i>Urothemis bisignata</i>	Poorly-known and doubtfully a full species (perhaps synonymous with <i>signata</i>). One at Kampong Marang (South Sulawesi). No published records for Sulawesi apparently but a few specimens collected in Sulawesi exist at Naturalis (The Netherlands).
<i>[Zygonyx ilia]</i>	A dull slightly-pruinose libellulid flew low over the water at Bantimurung-Bulusaraung NP and may well have been this poorly-known species. Endemic to Sulawesi.
<i>Zyxomma obtusum</i>	One captured on film poorly at Tunan Waterfall (North Sulawesi). A great showing at dusk around Batuputih village

Zyxomma petiolatum (Tangkoko).
Many over shaded pond near Tunan Waterfall (North Sulawesi). A few found roosting during the day at Tangkoko.

Odonata recorded on Halmahera (and Ternate) between 14th and 18th April

<i>Lestes quercifolius</i> <i>Argiolestes</i> sp.	A single male photographed at the "grebe" pond by Phil. The battered female flatwing found by Phil on Gng. Uni-uni may well be a species new to science. There are no published records of any flatwings on Halmahera. Endemic <i>Argiolestes</i> are known only from Obi (<i>obiensis</i>) and Bacan (<i>alfurus</i>) in the Northern Moluccas.
<i>Rhinocypha tincta semitincta</i>	Recorded on nearly every stream and river we visited on Halmahera.
<i>Selysioneura thalia</i>	Frequently encountered on hill streams on Halmahera. A handsome species.
<i>Drepanosticta sembilanensis</i>	A few on Gunung Uni-uni.
<i>Nososticta exul</i>	Frequently encountered on most lowlands streams and rivers.
<i>Palaiargia perimecosoma</i>	Regular encounters with this long-abdomened species was one of the highlights of the Gng. Uni-uni day.
<i>Palaiargia tanysiptera</i>	Single female egg-laying on a dark stream on Gng Uni-uni.
<i>Argiocnemis femina</i>	Sofifi area (common). Also recorded on Ternate.
<i>Argiocnemis rubescens</i>	Sofifi area and the "grebe" pond. There are no published records of this species for Halmahera. Our photos look good for sub-species <i>lunulata</i> .
<i>Ischnura senegalensis</i>	Sofifi and Subaim.
<i>Pseudagrion ustum</i>	Very few on lowland streams.
<i>Pseudagrion microcephalum</i>	Frequently encountered in the lowlands, also recorded on Ternate.
<i>Teinobasis</i> sp.	grey species noted on Gng. Uni-uni may have been a new species for us, as females differed in colouration from North Sulawesi individuals.
<i>Teinobasis rufithorax</i>	The red <i>Teinobasis</i> seen at the "grebe" pond and at the lake on Ternate.
<i>Xiphiagrion cyanomelas</i>	Small numbers at the "grebe" pond.
<i>Ictinogomphus leiftincki</i>	We were expecting <i>australis</i> on Halmahera but got a <i>celebensis</i> -type <i>Ictinogomphus</i> instead, best split as <i>leiftincki</i> . Seen in numbers at Akatejawe-Lolobata NP and one at the "grebe" pond too.
<i>Anax gibbulosus</i>	The species flying at Gng. Uni-uni and the "grebe" pond was assigned to this species.
<i>Agrionoptera insignis</i>	A few recorded.
<i>Brachydiplax duiivenbodei</i>	A powder-blue libellulid recorded in the Sofifi area and on the pond at Akatejawe-Lolobata NP.
<i>Camacina gigantea</i>	The <i>Camacina</i> seen at the "grebe" pond was this species. There are no published records of this species for Halmahera, this record neatly fills a 'gap' in known distribution.
<i>Diplacina phoebe</i>	This spectacular libellulid was encountered regularly on Gng. Uni-uni. Almost certainly in a different genus than the <i>Diplacina</i> encountered in Sulawesi. A trip highlight.
<i>Diplacodes trivialis</i>	Scattered records.
<i>Huonia daphne</i>	Small numbers up the darker side-streams on Gng. Uni-uni.
<i>Huonia rheophila</i>	Present in large numbers on rivers and streams, mostly in hill country but scattered in the lowlands.
<i>Hydrobasileus brevistylus</i>	A male and female photographed at the "grebe" pond caused widespread confusion. This looks nothing like the other members of the genus to be encountered further west... Sofifi area.
<i>Lathrecista asiatica</i>	Scattered records in suitable habitat.
<i>Nannophya pygmaea</i>	A single female in the Sofifi area.
<i>Nesoxenia mysis mollucana</i>	The common <i>Neurothemis</i> in the lowlands on Halmahera.
<i>Neurothemis manadensis</i>	Only recorded on Gng. Uni-uni.
<i>Neurothemis ramburi</i>	Widespread.
<i>Orthetrum serapia</i>	

<i>Orthetrum glaucum</i>	Recorded high up on Gng. Uni-uni.
<i>Orthetrum villosovittatum</i>	Recorded high up on Gng. Uni-uni.
<i>Pantala flavescens</i>	Scattered records, mostly along roads. New record for Halmahera?
<i>Rhodothemis nigripes</i>	The big red <i>Rhodothemis</i> frequently encountered in the Sofifi area.
<i>Rhyothemis</i> sp.	When the sun came out in force at the “grebe” pond, Phil spotted the first of about five <i>Rhyothemis</i> individuals, all showed completely pigmented wings, that were glossy black-blue in colour. Incredibly it seems likely that these individuals are of an undescribed species!
<i>Rhyothemis resplendens</i>	Two or three fine males on the first afternoon in the Sofifi area.
<i>Rhyothemis phyllis</i>	Recorded at all ponds visited.
<i>Tetrathemis leptopera</i>	A few in the Sofifi area.
<i>Tholymis tillarga</i>	Scattered records. Also recorded on Ternate.
<i>Tramea transmarina</i>	A few at the “grebe” pond en route to Sofifi.

Birds recorded in Sulawesi and Halmahera between 3rd and 21st April

Sunda teal	<i>Anas gibberifrons</i>	Kampong Marang (South Sulawesi).
[Tabon scrubfowl]	<i>Megapodius cummingi</i>	[Tangkoko]
Rock pigeon	<i>Columba livia</i>	towns.
Sulawesi cuckoo-dove	<i>Macropygia albicapilla</i>	Lore Lindu.
Sultan’s cuckoo-dove	<i>Macropygia doreya</i>	One in the Sofifi area.
Zebra dove	<i>Geopelia striata</i>	Tangkoko area (introduced to Sulawesi).
Nicobar pigeon	<i>Caloenas nicobarica</i>	One over the road on the way to Subaim (Halmahera).
Asian emerald dove	<i>Chalcophaps indica</i>	One on Halmahera. A few at Tangkoko.
Red-eared fruit-dove	<i>Ptilinopus fischeri</i>	Lore Lindu (1).
[Green imperial pigeon]	<i>Ducula aenea</i>	Heard at Tangkoko.
Pied imperial pigeon	<i>Ducula bicolor</i>	One en route to Subaim (Halmahera). Two at Tangkoko.
Sulawesi malkoha	<i>Rhamphococcyx calyorhynchus</i>	Lore Lindu.
Oriental/Himalayan cuckoo?	<i>Cuculus optatus/saturatus</i>	Two together on Halmahera.
Sulawesi brush cuckoo	<i>Cacomantis virescens</i>	Lore Lindu, Palu.
Australian brush cuckoo	<i>Cacomantis variolosus</i>	One at Akatejewa Lolobata NP (Halmahera).
Lesser coucal	<i>Centropus bengalensis</i>	Lore Lindu and Halmahera.
Grey-rumped treeswift	<i>Hemiprocne longipennis</i>	widespread Sulawesi.
Glossy swiftlet	<i>Collocalia esculenta</i>	widespread Sulawesi.
Halmahera swiftlet	<i>Aerodramus infuscatus</i>	Halmahera.
White-throated needletail	<i>Hirundapus caudacutus</i>	A few migrating over Halmahera.
[Moluccan owl-nightjar]	<i>Aegotheles crinifrons</i>	Heard only along the Foli Rd one night.
Sulawesi nightjar	<i>Caprimulgus celebensis</i>	One seen perched at Tangkoko. Long overdue.
Savanna nightjar	<i>Caprimulgus affinis</i>	Makassar, [Palu]
Barred rail	<i>Gallirallus torquatus</i>	Two at Tangkoko.
Buff-banded rail	<i>Gallirallus philippensis</i>	Foli Rd (Halmahera).
Sulawesi bush-hen	<i>Amaurornis isabellina</i>	Tangkoko.
Pied stilt	<i>Himantopus leucocephalus</i>	Makassar rice paddies.
Common sandpiper	<i>Actitis hypoleucos</i>	One on the river near Subaim. More at Tangkoko.
Grey-tailed tattler	<i>Heteroscelus brevipes</i>	One on the river near Subaim!
Barred buttonquail	<i>Turnix suscitator</i>	Pair at Tangkoko.
White-winged tern	<i>Chlidonias leucopterus</i>	Makassar rice paddies.
Whiskered tern	<i>Chlidonias hybridus</i>	Makassar rice paddies.
Cattle egret	<i>Ardea ibis</i>	Manado and Halmahera.

Eastern great egret	<i>Ardea modesta</i>	1 in rice paddies around Makassar.
Little egret	<i>Egretta garzetta</i>	Scattered records in Sulawesi.
Pacific reef egret	<i>Egretta sacra</i>	One in Palu.
Javan pond heron	<i>Ardeola speciosus</i>	Rice paddies in Sulawesi.
Striated heron	<i>Butorides striatus</i>	Scattered records.
Sulawesi honey buzzard	<i>Pernis celebensis</i>	One at Lore Lindu.
Sulawesi serpent eagle	<i>Spilornis rufipectus</i>	Singles at Bantimurung-Bulusaraung NP and Lore Lindu NP.
Sulawesi hawk eagle	<i>Spizaetus lanceolatus</i>	One at Lore Lindu. Another at Tangkoko.
Black eagle	<i>Ictinaetus malayensis</i>	One at Lore Lindu. Another on Gng. Uni-uni (Halmahera).
Brahminy kite	<i>Haliastur indus</i>	One at Palu. Also a few in North Sulawesi and on Halmahera.
Moluccan scops owl	<i>Otus magicus</i>	One along the Foli Road (Halmahera).
Sulawesi scops owl	<i>Otus manadensis</i>	Two roosting birds at Tangkoko.
Halmahera boobook	<i>Ninox hypogramma</i>	One along the Foli road (Halmahera).
Blyth's hornbill	<i>Rhyticeros plicatus</i>	Small numbers noted almost daily on Halmahera.
Knobbed hornbill	<i>Rhyticeros cassidix</i>	One in flight at Wuasa (Lore Lindu). Three seen in the park proper perched in roadside trees. Heard at Tangkoko.
Ashy woodpecker	<i>Mulleripicus fulvus</i>	Nice male at nest-hole at Tunan Waterfall. Another at Tangkoko.
Common paradise-kingfisher	<i>Tanysiptera galeata</i>	Sofifi.
Sulawesi lilac kingfisher	<i>Cittura cyanotis</i>	One at Tangkoko.
Ruddy kingfisher	<i>Halcyon coromanda</i>	One at Sungai Pattunuang Asue.
Blue-and-white kingfisher	<i>Todiramphus diops</i>	Two on wires en route to Sofifi.
Sombre kingfisher	<i>Todiramphus funebris</i>	Sofifi.
Collared kingfisher	<i>Todiramphus chloris</i>	Common Sulawesi.
[Sulawesi dwarf kingfisher]	<i>Ceyx fallax</i>	Heard at Lore Lindu.
Blue-eared kingfisher	<i>Alcedo meninting</i>	Bantimurung-Bulusaraung NP.
Common kingfisher	<i>Alcedo atthis</i>	One on Halmahera.
Blue-tailed bee-eater	<i>Merops philippinus</i>	Palu, Lore Lindu.
Rainbow bee-eater	<i>Merops ornatus</i>	Halmahera.
Dollarbird	<i>Eurystomus orientalis</i>	One en route to Subaim (Halmahera) and another or the same on the way back.
Indonesian kestrel	<i>Falco moluccensis</i>	One in the rain on Gng. Halmahera.
Umbrella cockatoo	<i>Cacatua alba</i>	One flyover on Gng. Uni-uni.
[Violet-necked lory]	<i>Eos riciniata</i>	Heard only on Halmahera
Meyer's lorikeet	<i>Trichoglossus meyeri</i>	Lore Lindu.
Red-flanked lorikeet	<i>Charmosyne placentis</i>	Noted daily on Halmahera.
Red-cheeked parrot	<i>Geoffroyus geoffroyi</i>	A few whilst driving on Halmahera.
Eclectus parrot	<i>Eclectus rorarius</i>	Two males flying over on separate occasions on Halmahera.
Moluccan hanging-parrot	<i>Loriculus amabilis</i>	One flew through at "grebe" pond.
[Ivory-breasted pitta]	<i>Pitta maxima</i>	Calling after rain shower on Gng. Uni-uni.
Sulawesi myzomela	<i>Myzomela chloroptera</i>	Lore Lindu.
Halmahera friarbird	<i>Melitograis giloloensis</i>	Two seen on Gng. Uni-uni.
Golden-bellied gerygone	<i>Gerygone sulphurea</i>	Widespread Sulawesi.
[Halmahera oriole]	<i>Oriolus phaeochromus</i>	Heard on Halmahera.
[Black-naped oriole]	<i>Oriolus chinensis</i>	Heard at Bantimurung-Bulusaraung NP.
Sulphur-bellied whistler	<i>Pachycephala sulfuriventer</i>	Lore Lindu.
White-breasted woodswallow	<i>Artamus leucorhynchus</i>	Open habitats in Sulawesi and Halmahera.
Moluccan cuckooshrike	<i>Coracina atriceps</i>	Two on Gng. Uni-uni.

Rufous-bellied triller	<i>Lalage aurea</i>	One on roadside wires on drive back to Sofifi (Halmahera).
Lesueur's triller	<i>Lalage sueurii</i>	Bantimurung-Bulusaraung NP.
Sulawesi fantail	<i>Rhipidura teysmanni</i>	Lore Lindu.
Willie fantail	<i>Rhipidura leucophrys</i>	Halmahera.
White-eyed spangled drongo	<i>Dicrurus leucops</i>	Tangkoko.
Sulawesi spangled drongo	<i>Dicrurus montanus</i>	Bantimurung-Bulusaraung NP and Lore Lindu.
Pale-blue monarch	<i>Hypothymis puella</i>	Lore Lindu.
Long-billed crow	<i>Corvus validus</i>	An amazing species – three on Gng. Uni-uni.
Torresian crow	<i>Corvus orru</i>	One on Ternate.
Sulawesi crow	<i>Corvus celebensis</i>	Bantimurung-Bulusaraung NP, Lore Lindu.
Citrine flycatcher	<i>Culicicapa helianthea</i>	Lore Lindu.
Barn swallow	<i>Hirundo rustica</i>	A few in southern Sulawesi.
Pacific swallow	<i>Hirundo tahitica</i>	open habitats in Sulawesi.
Sooty-headed bulbul	<i>Pycnonotus aurigaster</i>	introduced Sulawesi.
Halmahera golden bulbul	<i>Hypsipetes chloris</i>	Noted on three days on Halmahera, birds in fruiting trees on Gng. Uni-uni.
Sulawesi babbler	<i>Trichastoma celebense</i>	Palu, Lore Lindu.
Lemon-bellied white-eye	<i>Zosterops chloris</i>	outside Palu.
Black-crowned white-eye	<i>Zosterops atrifrons</i>	Lore Lindu.
[Mountain leaftoiler]	<i>Phyllergates cuculatus</i>	[Lore Lindu].
Sulawesi grasshopper warbler	<i>Locustella castanea</i>	One Lore Lindu down to one metre!
Cisticola sp.	<i>Cisticola juncidis/exilis</i>	Lore Lindu.
Metallic starling	<i>Aplonis metallica</i>	Halmahera and Ternate.
Great myna	<i>Scissirostrum dubium</i>	Lore Lindu.
Flame-browed myna	<i>Enodes erythrophris</i>	Lore Lindu and Tangkoko.
Grey-streaked flycatcher	<i>Muscicapa griseisticta</i>	One at Lore Lindu. Another on Halmahera.
Turquoise warbling-flycatcher	<i>Eumyias panayensis</i>	Sulawesi.
Hoeyell's warbling-flycatcher	<i>Eumyias hoeyelli</i>	Lore Lindu.
[Little pied flycatcher]	<i>Ficedula westermanni</i>	[Lore Lindu]
Pied bushchat	<i>Saxicola caprata</i>	Lore Lindu.
Yellow-sided flowerpecker	<i>Dicaeum aureolimbatum</i>	Bantimurung-Bulusaraung NP.
Grey-sided flowerpecker	<i>Dicaeum celebicum</i>	One outside Palu.
Brown-throated sunbird	<i>Anthreptes malacensis</i>	Palu.
Black sunbird	<i>Leptocoma sericea</i>	Bantimurung-Bulusaraung NP, Lore Lindu. Also recorded on Ternate.
Crimson sunbird	<i>Aethopyga siparaja</i>	One male Lore Lindu.
Sahul sunbird	<i>Cinnyris clementiae</i>	Halmahera.
Black-faced munia	<i>Lonchura molucca</i>	widespread Sulawesi.
Scaly-breasted munia	<i>Lonchura punctulata</i>	Palu.
Black-headed munia	<i>Lonchura atricapilla</i>	widespread.
Eurasian tree sparrow	<i>Passer montanus</i>	ubiquitous.
Eastern yellow wagtail	<i>Motacilla tschutschensis</i>	some in rice paddies outside Palu. Some on Halmahera.
Grey wagtail	<i>Motacilla cinerea</i>	Lore Lindu.

Mammals recorded in Sulawesi and Halmahera between 4th and 21st April

Bear cuscus	<i>Ailurops ursinus</i>	One at Sungai Pattunuang Asue.
Moor macaque	<i>Macaca maura</i>	Small troupe at Bantimurung-Bulusaraung NP.
Sulawesi crested	<i>Macaca nigra</i>	A single rogue tossing coconuts near the

macaque

village at Tangkoko. Phil went out with Meidy on the last morning there for a great encounter with the habituated Rambo Dua troupe.

Sulawesi dwarf squirrel

Prosciurillus murinus

One at Lore Lindu.

Spectral tarsier

Tarsius spectrum

Two in the late afternoon at Tangkoko.

Reptiles and amphibians recorded in Sulawesi and Halmahera between 3rd and 21st April

Four-lined tree-frog

Polypedates leucomystax

Tangkoko.

Sulawesi toad

Ingerophrynus celebensis

Tangkoko.

Sulawesi sailfin

Hydrosaurus celebensis

Sungai Pattunuang Asue and Bantimurung-Bulusaraung NP. One full adult male seen by some.

Halmahera sailfin

Hydrosaurus weberi

Sofifi area.

Sulawesi flying lizard

Draco spilonotus

One male seen well displaying at Tangkoko. Others glimpsed.