



**Report of a Rapid Biodiversity Assessment at
Shimentai National Nature Reserve,
North Guangdong, China, August 2000**

Kadoorie Farm and Botanic Garden
in collaboration with
Guangdong Provincial Forestry Department
South China Institute of Botany
South China Normal University

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Report of a Rapid Biodiversity Assessment at Shimentai National Nature Reserve, North Guangdong, China, August 2000

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Background

The present report details the findings of a visit to North Guangdong by members of Kadoorie Farm and Botanic Garden (KFBG) in Hong Kong and their colleagues, as part of KFBG's South China Biodiversity Conservation Programme. The overall aim of the programme is to minimise the loss of forest biodiversity in the region, and the emphasis in the first phase is on gathering up-to-date information on the distribution and status of fauna and flora.

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Translation of common Chinese geographical terms

Romanized Chinese (pinyin)	English meaning
Bei	north
Dao	island
Dong	east
Feng shui	the Chinese system of geomancy
Feng, Ding	peak
Gang	harbour
Hai	sea
He, Chuan, Jiang	river
Hu, Chi	lake
Keng, Gu, Gou	valley, stream
Kou	outlet
Ling	range
Nan	south
Ping	flat
Shan	mountain
Shi	city
Tun	hamlet
Wan	bay
Xi	west
Xi, Yong	stream
Xian	county
Xiang, Cun	village

Report of a Rapid Biodiversity Assessment at Shimentai National Nature Reserve, North Guangdong, China, August 2000

Objectives

- The aims of the survey were to collect up-to-date information on the fauna and flora of Shimentai National Nature Reserve, and to use this to help determine conservation priorities within South China.

Methods

- On 12 August 2000 a team of biologists from Hong Kong (BH, ML, LKS, CW, BC, NSC), Xinyang (LHJ), Guangxi (HJH) and Guangzhou (XZ, DHJ, CZY, CBH, LS) arrived in Yingde City, after conducting a rapid biodiversity assessment at Guanyinshan Nature Reserve in Fogang County (Kadoorie Farm and Botanic Garden, 2003). From 13-15 August they split into two teams to survey Shimentai Nature Reserve.
- During fieldwork visual searching for plants, mammals, birds, reptiles, amphibians, fish, ants, butterflies and dragonflies was conducted. Frogs and birds were also identified by their calls. Plant records were made by field observation, with some specimens collected.
- No assessment of mammal status was made.
- Vascular plant records were made by CBH, CZY or NSC, and edited by NSC, except for orchids, for which records were verified and edited by GS. Records of birds were made or verified by LKS or CW, reptiles and amphibians by ML or BC, fish by BC, DHJ and CXL, dragonflies verified by KW, GTR or ML and butterflies by GTR or ML.
- Nomenclature in the report is standardised based, unless otherwise stated, on the following references:
 - Flora (Pteridophyta, Gymnospermae and Angiospermae excluding Orchidaceae): Anon. (1959-2001); Anon. (1996-2001); Anon. (2002a, 2002b); The Plant Names Project (2002);
 - Orchids (Angiospermae: Orchidaceae): Chen (1999); Lang (1999); Tsi (1999);
 - Mammals (Mammalia): Wilson & Cole (2000);
 - Birds (Aves): Inskipp *et al.* (1996);
 - Reptiles and Amphibians (Reptilia and Amphibia): Zhao E.-M. & Adler (1993); Zhao E. *et al.* (2000);
 - Fish (Actinopterygii): Nelson (1994); Wu *et al.* (1999);
 - Dragonflies (Insecta: Odonata): Schorr *et al.* (2001a, 2001b);
 - Butterflies (Insecta: Lepidoptera): Bascombe (1995).
- Information on the global status of species is from IUCN publications, notably IUCN (2002). Certain taxa, including orchids, reptiles, amphibians, fish and invertebrates, have yet to be properly assessed for global status. National conservation status of orchids is based on Wang *et al.* (in press)
- Protected status in China is based on Hua & Yan (1993) for animals, and State Forestry Administration & Ministry of Agriculture (1999) for plants.

Location and management

- Shimentai National Nature Reserve is situated in the northern part of Yingde “City” (county), Qingyuan City District, central north Guangdong, at 24°22’-24°31’N by 113°05’-113°31’E. The size of the nature reserve is 336km² (South China Agricultural University & Shimentai Provincial Nature Reserve Management Authority, 2000); another cited figure of 3,172km² (Zhu *et al.*, 2001) appears to be an error.
- The reserve has a mountainous landscape dominated by sandy shale and granite, with an altitude range from 320 m to 1,587 m at the summit of Chuandi Ding (Zhang J.C. *et al.*, 1998). Chuandi Ding is shared with Luokeng Nature Reserve, Qujiang County, Shaoguan City District.
- The region has a subtropical monsoon climate. No climatic data were available for the reserve. Nearby Yingde City (46m asl) has a mean monthly temperature from 11°C in January to 29°C in July, and annual precipitation of 1,875 mm, mainly from April to October; the climate at Shimentai is likely to

be 4-5°C cooler and wetter (>2,000mm). The streams of the nature reserve are in the Bei Jiang catchment.

- In 2000 Shimentai Nature Reserve had 701 families with a population of 3,775, including Yao and Hakka people. Farming was the major source of income, and average annual income was 700-2,000 RMB per head (South China Agricultural University & Shimentai Provincial Nature Reserve Management Authority, 2000).
- Shimentai was designated a provincial nature reserve in 1998 by the Guangdong Provincial Government; there was a designated ecotourism zone between 24°23'49"-24°28'04"N, 113°16'07" – 113°20'18"E, an area of 30km² (Zhang J.C. *et al.*, 1998). Shimentai was upgraded to a National-level Nature Reserve in 2002.

Results

Vegetation

- Zonal vegetation of Shimentai region should be southern subtropical evergreen broadleaf forest. The original forest was cleared at an unknown time. Due to the large size of the reserve and limited time, the survey team was unable to survey all the vegetation types present. Mature, relatively extensive secondary forest could be found in Danzhu Keng whereas natural forests were more patchy at Ludong, in a matrix of young forest and grassland/shrubland.
- Mature secondary forest with trees up to 15-20m in height and 40-60cm dbh was surveyed. Forest cover at Danzhu Keng was fairly extensive, whereas that at Ludong was restricted to steep hillsides along ravines. Dominant canopy species included *Engelhardtia roxburghiana*, *Castanopsis fabri*, *C. eyrei*, *C. fissa*, *C. lamontii*, *Bischofia javanica* and *Ixonanthes chinensis*.
- Younger secondary forest with trees up to 10m and 30cm dbh, dominated by *Pinus massoniana*, *Litsea cubeba*, *Sassafras tzumu*, *Cratogeomys cochinchinense*, *Schima superba*, *Mallotus paniculatus*, *Sapium discolor*, *Castanopsis fissa*, *Alniphyllum eberhardtii* and *Toxicodendron succedaneum*, was surveyed.
- Extensive grass-shrub mixture was found around Qianjin Cun. Such habitat may have been fire-maintained and was dominated by *Lepidosperma chinensis*, *Gahnia tristis*, *Miscanthus sinensis*, *Rhaphiolepis indica*, *Baeckea frutescens*, *Rhodomyrtus tomentosa* and *Litsea cubeba*.

Flora

- The present survey recorded 445 vascular plant species including 44 fern species in 27 families, three gymnosperms in three families, and 398 angiosperms in 104 families (Table 1). This is a rather high number given the two days of fieldwork (although the split team had botanists working in two different areas). Earlier surveys had recorded 2,423 vascular plant species in 272 families (Zhang J.C., 2001).
- Among the flora recorded in the present survey, several species are of conservation importance:
 - *Bretschneidera sinensis* is considered globally Endangered and is under Class I National Protection in China. The species is widespread in South China but is almost always locally rare. A single tree about 5m tall and 20cm dbh was seen.
 - *Ixonanthes chinensis* is globally Vulnerable although it is widespread in South China and occasionally locally dominant in evergreen broadleaf forest. It was locally fairly common near Boluo Town.
 - *Cinnamomum camphora* and *Toona ciliata* are under Class II National Protection. The former has long been planted in South China as a tree crop and is common around villages. The latter is fairly widespread in South China.
 - *Brainea insignis*, *Alsophila spinulosa*, and *Cibotium barometz* are under Class II National Protection. *Brainea insignis* and *Cibotium barometz* are often locally common on hillside shrubland and forest margins but are threatened by collection for ornamental and medicinal plants. *Alsophila spinulosa* is widespread in South China but is often restricted to relatively intact forest. A small population of ten plants was seen once, while single individuals were found at another location.
 - *Blastus pauciflorus* is endemic to Guangdong and Jiangxi.

Table 1. Vascular plants of Shimentai National Nature Reserve recorded in the present survey. Species which are nationally Protected (Class I or II) (State Forestry Administration & Ministry of Agriculture, 1999), globally Threatened or Lower Risk (Near-threatened) (IUCN, 2002) or globally restricted are indicated. ^A surveyed by Team A; ^B surveyed by Team B.

Family	Scientific name	Notes
PTERIDOPHYTA		
Adiantaceae	<i>Adiantum flabellulatum</i> L.	
Aspidiaceae	<i>Ctenitis rhodolepis</i> (C.B. Clarke) Ching <i>Tectaria subtriphylla</i> (Hook. & Arn.) Copel.	
Aspleniaceae	<i>Asplenium normale</i> D. Don	
Athyriaceae	<i>Allantodia metteniana</i> (Miq.) Ching <i>Diplazium donianum</i> (Mett.) Tardieu	
Blechnaceae	<i>Blechnum orientale</i> L. <i>Brainea insignis</i> (Hook.) J. Sm. <i>Woodwardia japonica</i> (L.f.) Sm.	Protected II
Cyatheaceae	<i>Alsophila spinulosa</i> (Wall. ex Hook.) R.M.Tryon	Protected II
Davalliaceae	<i>Davallia tyermannii</i> (T. Moore) Hook. & Baker	
Dicksoniaceae	<i>Cibotium barometz</i> (L.) J. Sm.	Protected II
Drynariaceae	<i>Pseudodrynaria coronans</i> (Wall. ex Mett.) Ching	
Dryopteridaceae	<i>Cyrtomium balansae</i> (H. Christ) C. Chr. <i>Dryopteris decipiens</i> (Hook.) Kuntze	
Elaphoglossaceae	<i>Elaphoglossum yoshinagae</i> (Yatabe) Makino	
Gleicheniaceae	<i>Dicranopteris pedata</i> (Houtt.) Nakaïke <i>Diplopterygium chinensis</i> (Rosenst.) DeVol	
Grammitidaceae	<i>Grammitis lasiosora</i> (Blume) Ching	
Huperziaceae	<i>Phlegmariurus fordii</i> (Baker) Ching	
Lycopodiaceae	<i>Lycopodium casuarinoides</i> (Spring) Holub	
Lygodiaceae	<i>Lygodium scandens</i> (L.) Sw.	
Marattiaceae	<i>Angiopteris fokiensis</i> Hieron.	
Nephrolepidaceae	<i>Nephrolepis auriculata</i> (L.) Trimea	
Oleandraceae	<i>Oleandra intermedia</i> Ching	
Osmundaceae	<i>Osmunda vachellii</i> Hook.	
Plagiogyriaceae	<i>Plagiogyria distinctissima</i> Ching	
Polypodiaceae	<i>Colysis elliptica</i> (Thunb.) Ching <i>Lemmaphyllum microphyllum</i> C. Presl <i>Microsorium fortunei</i> (T. Moore) Ching <i>Pyrrosia adnascens</i> (Sw.) Ching <i>Pyrrosia lingua</i> (Thunb.) Farw	
Pteridaceae	<i>Histiopteris incisa</i> (Thunb.) J. Sm. <i>Pteris ensiformis</i> Burm. f. <i>Pteris fauriei</i> Hieron. <i>Pteris multifida</i> Poir. <i>Pteris semipinnata</i> L. <i>Pteris vittata</i> L. <i>Pteridium aquilinum</i> (L.) Kuhn var. <i>latiusculum</i> (Desv.) Underw. ex A. Heller	
Selaginellaceae	<i>Selaginella delicatula</i> (Desv. ex Poir.) Alston	
Sinopteridaceae	<i>Onychium japonicum</i> (Thunb.) Kunze	
Thelypteridaceae	<i>Cyclosorus parasiticus</i> (L.) Farw. <i>Pronephrium aspera</i> (C. Presl) W. C. Shieh & J. L. Tsai	
Vittariaceae	<i>Vittaria flexuosa</i> Fée	
GYMNOSPERMAE		
Gnetaceae	<i>Gnetum luofuense</i> C. Y. Cheng	
Pinaceae	<i>Pinus massoniana</i> Lamb.	
Taxodiaceae	<i>Cunninghamia lanceolata</i> (Lamb.) Hook.	planted
ANGIOSPERMAE		
Dicotyledonae		
Acanthaceae	<i>Baphicacanthus cusia</i> (Nees) Bremek. <i>Dicliptera chinensis</i> (L.) Juss. <i>Hygrophila salicifolia</i> (Vahl.) Ness	
Aceraceae	<i>Acer davidii</i> Franch. <i>Acer fabri</i> Hance	
Actinidiaceae	<i>Actinidia latifolia</i> (Gardner & Champ.) Merr.	

Family	Scientific name	Notes
	<i>Sarcandra glabra</i> (Thunb.) Nakai	
Clethraceae	<i>Clethra fabri</i> Hance	
Clusiaceae	<i>Cratoxylum cochinchinense</i> (Lour.) Blume	
	<i>Garcinia multiflora</i> Champ. ex Benth.	
	<i>Hypericum japonicum</i> Thunb. ex Murray	
Connaraceae	<i>Rourea microphylla</i> (Hook. & Arn.) Planch.	
Daphniphyllaceae	<i>Daphniphyllum calycinum</i> Benth	
Dilleniaceae	<i>Tetracera asiatica</i> (Lour.) Hoog.	
Ebenaceae	<i>Diospyros morrisiana</i> Hance ex. Walpers	
Elaeagnaceae	<i>Elaeagnus gonyanthes</i> Benth.	
Elaeocarpaceae	<i>Elaeocarpus chinensis</i> (Gardner & Champ.) Hook. f. ex Benth.	
	<i>Elaeocarpus japonicus</i> Siebold & Zucc.	
	<i>Elaeocarpus nitentifolius</i> Merr. & Chun	
	<i>Elaeocarpus sylvestris</i> (Lour.) Poir.	
	<i>Sloanea sinensis</i> (Hance) Hemsl.	
Ericaceae	<i>Enkianthus quinqueflorus</i> Lour.	
	<i>Lyonia ovalifolia</i> (Wall.) Drude	
	<i>Rhododendron farrerae</i> Tate	
	<i>Rhododendron moulmainense</i> Hook. f.	
	<i>Rhododendron simsii</i> Planch.	
	<i>Rhododendron tsoi</i> Merr.	
	<i>Vaccinium bracteatum</i> Thunb.	
	<i>Vaccinium mandarinorum</i> Diels	
Escalloniaceae	<i>Itea chinensis</i> Hook. & Arn	
Euphorbiaceae	<i>Alchornea trewioides</i> (Benth.) Muell.-Arg.	
	<i>Antidesma japonicum</i> Siebold & Zucc.	
	<i>Aporosa dioica</i> (Roxb.) Müll. Arg.	
	<i>Bischofia polycarpa</i> (H. Lév.) Airy Shaw	
	<i>Breynia fruticosa</i> (L.) Hook. f.	
	<i>Bridelia insulana</i> Hance	
	<i>Bridelia tomentosa</i> Blume	
	<i>Euphorbia hirta</i> L.	
	<i>Flueggea virosa</i> (Roxb. ex Willd.) Voigt.	
	<i>Glochidion puberum</i> (L.) Hutch.	
	<i>Glochidion triandrum</i> (Blanco) C.B. Rob	
	<i>Glochidion wrightii</i> Benth.	
	<i>Glochidion zeylanicum</i> (Gaertn.) A. Juss.	
	<i>Macaranga sampsoni</i> Hance	
	<i>Mallotus apelta</i> (Lour.) Müll. Arg.	
	<i>Mallotus paniculatus</i> (Lam.) Müll. Arg.	
	<i>Mallotus philippinensis</i> (Lam.) Müll. Arg.	
	<i>Mallotus repandus</i> (Willd.) Müll. Arg. var. <i>chrysocarpus</i> (Pamp.) S.M.	
	Hwang	
	<i>Phyllanthus emblica</i> L.	
	<i>Sapium discolor</i> (Champ. ex Benth.) Müll. Arg.	
	<i>Vernicia fordii</i> (Hemsl.) Airy Shaw	
Fagaceae	<i>Castanopsis carlesii</i> (Hemsl.) Hayata	
	<i>Castanopsis eyrei</i> (Champ. ex Benth.) Tutcher	
	<i>Castanopsis fabri</i> Hance	
	<i>Castanopsis fargesii</i> Franch.	
	<i>Castanopsis fissa</i> (Champ. ex Benth.) Rehder & E. H. Wilson	
	<i>Castanopsis fordii</i> Hance	
	<i>Castanopsis lamontii</i> Hance	
	<i>Cyclobalanopsis hui</i> (Chun) Chun ex Y.C. Hsu & H. Wei Jen	
	<i>Cyclobalanopsis myrsinifolia</i> (Blume) Oerst.	
	<i>Lithocarpus hancei</i> (Benth.) Rehder	
	<i>Lithocarpus uvariifolius</i> (Hance) Rehder	
Flacourtiaceae	<i>Casearia balansae</i> Gagnep.	
	<i>Homalium cochinchinense</i> (Lour.) Druce	
Gentianaceae	<i>Canscora andrographioides</i> Griffith ex C.B. Clarke	
Gesneriaceae	<i>Lysionotus pauciflorus</i> Maxim.	
	<i>Oreocharis benthami</i> C. B. Clarke ex A. & C. DC.	
	<i>Rhynchotechum ellipticum</i> (Wal. ex D. Dietr.) A. DC.	
Hamamelidaceae	<i>Altingia chinensis</i> (Champ. ex Benth.) Oliv. ex Hance	
	<i>Exbucklandia tonkinensis</i> (Lecomte) Steenis	
	<i>Loropetalum chinense</i> (R. Br.) Oliv.	

Family	Scientific name	Notes
Hydrangeaceae	<i>Dichroa febrifuga</i> Lour. <i>Hydrangea paniculata</i> Siebold <i>Pileostegia viburnoides</i> Hook. f. & Thomson	
Icacinaceae	<i>Mappianthes iodoides</i> Hand.-Mazz.	
Ixonanthaceae	<i>Ixonanthes chinensis</i> Champ.	Vulnerable
Juglandaceae	<i>Engelhardtia fenzelii</i> Merr. <i>Engelhardtia roxburghiana</i> Wall.	
Lamiaceae	<i>Anisomeles indica</i> (L.) Kuntze <i>Scutellaria indica</i> L. <i>Teucrium quadrifarium</i> Buch.-Ham. ex D. Don	
Lardizabalaceae	<i>Stauntonia chinensis</i> DC.	
Lauraceae	<i>Cassytha filiformis</i> L. <i>Cinnamomum appelianum</i> Schewe <i>Cinnamomum burmanni</i> (Nees & T. Nees) Blume <i>Cinnamomum camphora</i> (L.) J. Presl. <i>Cinnamomum porrectum</i> (Roxb.) Kosterm. <i>Cryptocarya concinna</i> Hance <i>Lindera communis</i> Hemsl. <i>Litsea acutivena</i> Hayata <i>Litsea cubeba</i> (Lour.) Pers. <i>Litsea elongata</i> Benth. & Hook. f. var. <i>subverticillata</i> (Y.C. Yang) Yen C. Yang & P.H. Huang <i>Litsea greenmaniana</i> C.K. Allen <i>Litsea monopetala</i> (Roxb. ex Baker) Pers. <i>Litsea rotundifolia</i> Hemsl. var. <i>oblongifolia</i> (Nees) C. K. Allen <i>Litsea verticillata</i> Hance <i>Machilus chinensis</i> (Champ. ex Benth.) Hemsl. <i>Machilus thunbergii</i> Siebold & Zucc. <i>Machilus velutina</i> Champ. ex Benth. <i>Machilus</i> sp. <i>Neolitsea cambodiana</i> Lecomte <i>Neolitsea chuii</i> Merr. <i>Sassafras tzumu</i> (Hemsl.) Hemsl.	Protected II
Loganiaceae	<i>Gelsemium elegans</i> (Gardner & Champ.) Benth. <i>Strychnos cathayensis</i> Merr.	
Lythraceae	<i>Rotala rotundifolia</i> (Buch.-Ham. ex Roxb.) Koehne	
Magnoliaceae	<i>Manglietia fordiana</i> Oliv. <i>Manglietia moto</i> Dandy <i>Michelia foveolata</i> Merr. ex Dandy <i>Michelia maudiae</i> Dunn <i>Michelia odora</i> (Chun) Nootb. & B. L. Chen	
Malvaceae	<i>Sida rhombifolia</i> L. <i>Urena lobata</i> L. <i>Urena procumbens</i> L.	pantropical weed pantropical weed
Melastomataceae	<i>Blastus cavaleriei</i> H. Lév. & Vaniot <i>Blastus cochinchinensis</i> Lour. <i>Blastus pauciflorus</i> (Benth.) Guillaumin <i>Melastoma candidum</i> D. Don <i>Melastoma dodecandrum</i> Lour. <i>Melastoma sanguineum</i> Sims <i>Memecylon ligustrifolium</i> Champ. ex Benth. <i>Osbeckia crinita</i> Benth. ex Triana	endemic to Guangdong & Jiangxi
Meliaceae	<i>Toona ciliata</i> M. Roem.	Protected II
Menispermaceae	<i>Cocculus orbiculatus</i> (L.) DC. <i>Pericampylus glaucus</i> (Lam.) Merr.	
Mimosaceae	<i>Adenanthera pavonina</i> L. var. <i>microsperma</i> (Teijsm. & Binnend.) I. C. Nielsen <i>Albizia corniculata</i> (Lour.) Druce <i>Pithecellobium clypearia</i> (Jack) Benth. <i>Pithecellobium lucidium</i> Benth.	
Moraceae	<i>Artocarpus styracifolius</i> Pierre <i>Artocarpus tonkinensis</i> A. Chev. ex Gagnep. <i>Broussonetia kaempferi</i> Sieb. <i>Broussonetia papyrifera</i> (L.) L'Hér. ex Vent.	

Family	Scientific name	Notes
	<i>Cudrania cochinchinensis</i> (Lour.) Kudo & Masam.	
	<i>Ficus esquiroliana</i> H. Lévl.	
	<i>Ficus fistulosa</i> Reinw. ex Blume	
	<i>Ficus hirta</i> Vahl	
	<i>Ficus hispida</i> L. f. var. <i>rubra</i> Corner	
	<i>Ficus langkokensis</i> Drake	
	<i>Ficus microcarpa</i> L. f.	
	<i>Ficus pumila</i> L.	
	<i>Ficus pyriformis</i> Hook. & Arn.	
	<i>Ficus variolosa</i> Lindl. ex Benth.	
Myricaceae	<i>Myrica rubra</i> (Lour.) Sieb. & Zucc.	
Myrsinaceae	<i>Ardisia chinensis</i> Benth.	
	<i>Ardisia crenata</i> Sims	
	<i>Ardisia lindleyana</i> D. Dietr.	
	<i>Ardisia mamillata</i> Hance	
	<i>Ardisia quinquegona</i> Blume	
	<i>Embelia ribes</i> Burm. f.	
	<i>Maesa japonica</i> (Thunb.) Moritz & Zoll.	
	<i>Mysine seguinii</i> H. Lévl.	
Myrtaceae	<i>Baeckea frutescens</i> L.	
	<i>Rhodomyrtus tomentosa</i> (Aiton) Hassk.	
	<i>Syzygium buxifolium</i> Hook. & Arn.	
	<i>Syzygium hancei</i> Merr. & L. M. Perry	
Olacaceae	<i>Schoepfia chinensis</i> Gardner & Champ.	
Onagraceae	<i>Ludwigia octovalvis</i> (Jacq.) Raven	
Oxalidaceae	<i>Oxalis corniculata</i> L.	
	<i>Oxalis corymbosa</i> DC.	
Papilionaceae	<i>Bowringia callicarpa</i> Champ. ex Benth.	
	<i>Dalbergia hancei</i> Benth.	
	<i>Desmodium heterocarpon</i> (L.) DC.	
	<i>Lespedeza formosa</i> (Vogel) Koehne	
	<i>Millettia dielsiana</i> Harms	
	<i>Millettia nitida</i> Benth.	
	<i>Millettia reticulata</i> Benth.	
	<i>Mucuna birdwoodiana</i> Tutch.	
	<i>Ormosia semicastrata</i> Hance	
	<i>Ormosia xylocarpa</i> Chun ex Merr. & L. Chen	
	<i>Phyllodium pulchellum</i> (L.) Desv.	
	<i>Pueraria lobata</i> (Willd.) Ohwi	
	<i>Tadehagi triquetrum</i> (L.) H. Ohashi	
Pentaphragaceae	<i>Pentaphragax euryoides</i> Gardner & Champ.	
Piperaceae	<i>Piper hancei</i> Maxim.	
	<i>Piper sarmentosum</i> Roxb.	
Pittosporaceae	<i>Pittosporum glabratum</i> Lindl.	
Plantaginaceae	<i>Plantago major</i> L.	introduced
Polygalaceae	<i>Polygala fallax</i> Hemsl.	
	<i>Xanthophyllum hainanense</i> Hu	
Polygonaceae	<i>Polygonum chinense</i> L.	
	<i>Polygonum hastato-sagittatum</i> Mak.	
	<i>Polygonum perfoliatum</i> L.	
	<i>Polygonum posumbu</i> Buch.-Ham. ex D. Don	
	<i>Reynoutria japonica</i> Houtt.	
Proteaceae	<i>Helicia cochinchinensis</i> Lour.	
	<i>Helicia reticulata</i> W. T. Wang	
Ranunculaceae	<i>Clematis chinensis</i> Osbeck	
	<i>Clematis meyeniana</i> Walp.	
Rhamnaceae	<i>Berchemia lineata</i> (L.) DC.	
	<i>Rhamnus crenata</i> Siebold & Zucc.	
	<i>Sageretia thea</i> (Osbeck) M.C. Johnst.	
	<i>Ventilago leiocarpa</i> Benth.	
Rhizophoraceae	<i>Carallia brachiata</i> (Lour.) Merr.	
Rosaceae	<i>Agrimonia nipponica</i> Koidz. var. <i>occidentalis</i> Skalicky	
	<i>Laurocerasus phaeosticta</i> (Hance) C. K. Schneid.	
	<i>Photinia prunifolia</i> (Hook. & Arn.) Lindl.	
	<i>Pygeum topengii</i> Merr.	
	<i>Pyrus calleryana</i> (L.) Lindl.	

Family	Scientific name	Notes
	<i>Rhaphiolepis indica</i> (L.) Lindl.	
	<i>Rosa laevigata</i> Michx.	
	<i>Rubus alceaefolius</i> Poir.	
	<i>Rubus leucanthus</i> Hance	
	<i>Rubus reflexus</i> Ker	
Rubiaceae	<i>Adina pilulifera</i> (Lam.) Franch. ex Drake	
	<i>Coptosapelta diffusa</i> (Champ. ex Benth.) Steenis	
	<i>Diplospora dubia</i> (Lindl.) Masam.	
	<i>Gardenia jasminoides</i> J. Ellis	
	<i>Hedyotis hedyotidea</i> (DC.) Merr.	
	<i>Ixora chinensis</i> Lam.	
	<i>Lasianthus chinensis</i> (Champ. ex Benth.) Benth.	
	<i>Morinda umbellata</i> L.	
	<i>Mussaenda pubescens</i> W. T. Aiton	
	<i>Ophiorrhiza cantoniensis</i> Hance	
	<i>Paederia scandens</i> (Lour.) Merr.	
	<i>Pavetta hongkongensis</i> Brem.	
	<i>Psychotria asiatica</i> L.	
	<i>Psychotria serpens</i> L.	epiphytic
	<i>Psychotria tutcheri</i> Dunn	
	<i>Tarenna mollissima</i> (Hook. & Arn.) B.L. Rob.	
Rutaceae	<i>Acronychia pedunculata</i> (L.) Miq.	
	<i>Evodia glabrifolia</i> (Champ. ex Benth.) C.C. Huang	
	<i>Evodia leptota</i> (Spreng.) Merr.	
	<i>Toddalia asiatica</i> (L.) Lam.	
	<i>Zanthoxylum avicennae</i> (Lam.) DC.	
	<i>Zanthoxylum myriacanthum</i> Wall. ex Hook. f.	
	<i>Zanthoxylum nitidum</i> (Roxb.) DC.	
Sabiaceae	<i>Meliosma rigida</i> Siebold & Zucc.	
	<i>Meliosma squamulata</i> Hance	
	<i>Sabia limoniacea</i> Wall. ex Hook. f. & Thomson	
Santalaceae	<i>Dendrotrophe frutescens</i> (Champ. ex Benth.) Danser	
Sapotaceae	<i>Sarcosperma laurinum</i> (Benth.) Hook. f.	
Saururaceae	<i>Houttuynia cordata</i> Thunb.	
Schisandraceae	<i>Kadsura coccinea</i> (Lem.) A.C. Sm.	
	<i>Kadsura longipedunculata</i> Finet & Gagnep.	
	<i>Schisandra viridis</i> A.C. Sm.	
Scrophulariaceae	<i>Adenosma glutinosum</i> (L.) Druce	
	<i>Brandisia swinglei</i> Merr.	
Solanaceae	<i>Solanum americanum</i> Mill.	introduced from America
Staphyleaceae	<i>Turpinia arguta</i> (Lindl.) Seem.	
Sterculiaceae	<i>Byttneria aspera</i> Colebr. ex Wall.	
	<i>Helicteres angustifolia</i> L.	
	<i>Pterospermum heterophyllum</i> Hance	
	<i>Reevesia thyrsoides</i> Lindl.	
	<i>Sterculia lanceolata</i> Cav.	
Styracaceae	<i>Alniphyllum eberhardtii</i> Guill.	
	<i>Alniphyllum fortunei</i> (Hemsl.) Makino	
	<i>Huodendron biaristatum</i> (W.W. Sm.) Rehder	
	<i>Rehderodendron kwangtungense</i> Chun	
	<i>Styrax suberifolius</i> Hook. & Arn.	
Symplocaceae	<i>Symplocos adenophylla</i> Wall. ex G. Don	
	<i>Symplocos cochinchinensis</i> (Lour.) S. Moore subsp. <i>laurina</i> (Retz.) Noot.	
	<i>Symplocos lancifolia</i> Siebold & Zucc.	
	<i>Symplocos paniculata</i> (Thunb.) Miq.	
	<i>Symplocos pseudobarberina</i> Gontsch.	
	<i>Symplocos stellaris</i> Brand	
Theaceae	<i>Adinandra bockiana</i> E. Pritz var. <i>acutifolia</i> (Hand.-Mazz.) Kobuski	
	<i>Adinandra millettii</i> (Hook. & Arn.) Benth. & Hook. f. ex Hance	
	<i>Camellia caudata</i> Wall.	
	<i>Camellia semiserrata</i> C. W. Chi	
	<i>Camellia sinensis</i> (L.) Kuntze	
	<i>Cleyera japonica</i> Thunb.	
	<i>Eurya chinensis</i> R. Br.	

Family	Scientific name	Notes
	<i>Eurya ciliata</i> Merr.	
	<i>Eurya groffii</i> Merr.	
	<i>Eurya nitida</i> Korthals	
	<i>Hartia villosa</i> (Merr.) Merr.	
	<i>Schima superba</i> Gardn. & Champ.	
	<i>Ternstroemia kwangtungensis</i> Merr.	
	<i>Tutcheria championii</i> Nakai	
Thymelaeaceae	<i>Wikstroemia indica</i> (L.) C. A. Mey.	
Tiliaceae	<i>Triumfetta cana</i> Blume	
Ulmaceae	<i>Celtis tetrandra</i> Roxb. ssp. <i>sinensis</i> (Pers.) Y.C. Tang	
	<i>Trema cannabina</i> Lour.	
	<i>Trema orientalis</i> (L.) Blume	
Urticaceae	<i>Pellionia grijsii</i> Hance	
Valerianaceae	<i>Patrinia villosa</i> (Thunb.) Juss.	
Verbenaceae	<i>Callicarpa formosana</i> Rolfe	
	<i>Callicarpa kochiana</i> Makino	
	<i>Callicarpa rubella</i> Lindl.	
	<i>Clerodendrum cyrtophyllum</i> Turcz.	
	<i>Clerodendrum fortunatum</i> L.	
	<i>Clerodendrum japonicum</i> (Thunb.) Sweet	
	<i>Lantana camara</i> L.	introduced
	<i>Vitex negundo</i> L.	
	<i>Vitex quinata</i> (Lour.) F.N. Williams	
Violaceae	<i>Viola confusa</i> Champ. ex Benth.	
	<i>Viola diffusa</i> Ging.	
Vitaceae	<i>Ampelopsis cantoniensis</i> (Hook. & Arn.) Planch.	
	<i>Cayratia japonica</i> (Thunb.) Gagnep.	
	<i>Tetrastigma planicaule</i> (Hook. f.) Gagnep.	
Monocotyledonae		
Araceae	<i>Acorus gramineus</i> Sol.	
	<i>Alocasia macrorrhiza</i> (L.) Schott	
	<i>Pothos chinensis</i> (Raf.) Merr.	
	<i>Calamus rhabdocladus</i> Burret	
Commelinaceae	<i>Floscopa scandens</i> Lour.	
	<i>Murdannia triquetra</i> (Wall. ex C.B. Clarke) A. Brückn.	
Cyperaceae	<i>Carex baccans</i> Nees	
	<i>Carex cruciata</i> Wahlenb.	
	<i>Carex harlandii</i> Boott	
	<i>Gahnia tristis</i> Nees	
	<i>Kyllinga brevifolia</i> Rottb.	
	<i>Lepidosperma chinensis</i> Nees & Meyen	
	<i>Rhynchospora rubra</i> (Lour.) Makino	
	<i>Scleria terrestris</i> (L.) Fassett	
Dioscoreaceae	<i>Dioscorea cirrhosa</i> Lour.	
Eriocaulaceae	<i>Eriocaulon sexangulare</i> L.	
Liliaceae	<i>Asparagus cochinchinensis</i> (Lour.) Merr.	
	<i>Dianella ensifolia</i> (L.) DC.	
	<i>Smilax china</i> L.	
	<i>Smilax glabra</i> Roxb.	
	<i>Smilax lanceifolia</i> Roxb.	
Musaceae	<i>Musa balbisiana</i> Colla	
Orchidaceae	<i>Coelogyne fimbriata</i> Lindl.	
	<i>Pholidota chinensis</i> Lindl.	
Poaceae	<i>Arundinella nepalensis</i> Trin.	
	<i>Cyrtococcum patens</i> (L.) A. Camus	
	<i>Dendrocalamus latiflorus</i> Munro	planted
	<i>Eleusine indica</i> (L.) Gaertn.	
	<i>Eragrostis unioloides</i> (Retz.) Nees ex Steud.	
	<i>Ichnanthus vicinus</i> (F.M. Bailey) Merr.	
	<i>Imperata koenigii</i> (Retz.) P. Beauv.	
	<i>Indocalamus longiauritus</i> Hand.-Mazz.	
	<i>Indocalamus</i> sp.	
	<i>Ischaemum ciliare</i> Retz.	
	<i>Lophatherum gracile</i> Brongn.	
	<i>Microstegium vagans</i> (Nees ex Steud.) A. Camus	

Family	Scientific name	Notes
Zingiberaceae	<i>Miscanthus floridulus</i> (Labill.) Warb. ex K. Schum & Lauterb.	
	<i>Miscanthus sinensis</i> Andersson	
	<i>Panicum brevifolium</i> L.	
	<i>Panicum repens</i> L.	
	<i>Paspalum conjugatum</i> Bergius	
	<i>Setaria palmifolia</i> (J. Koenig) Stapf	
	<i>Thysanolaena maxima</i> (Roxb.) Kuntze	
	<i>Alpinia hainanensis</i> K. Schum.	
	<i>Alpinia oblongifolia</i> Hayata	

Mammals

- Mammals previously recorded at Shimentai included Rhesus Monkey *Macaca mulatta* (especially around Wulangzhang), Tiger *Panthera tigris* (reported to migrate through Chuandi Ding twice each year), Eurasian Otter *Lutra lutra*, Sambar *Cervus unicolor*, Chinese Pangolin *Manis pentadactyla*, Wild Boar *Sus scrofa* and Chinese Hare *Lepus sinensis* (Zhang J.C. *et al.*, 1998).
- Former hunters at Shuitou Cun also reported having previously captured Leopard *Panthera pardus* and Serow *Naemorhedus sumatraensis* at a mountain reaching more than 1,000 m.
- Some of the other species previously recorded from the Yingde City area, such as Indochinese Shrew *Crocidura attenuata*, Asiatic Black Bear *Ursus thibetanus* (recorded as *Selenarctos thibetanus*), Sika Deer *Cervus nippon*, Indian Muntjak *Muntiacus muntjak*, Reeves's Muntjak *Muntiacus reevesi* and Chinese Goral *Naemorhedus caudatus* (recorded as *N. goral*) (Zhang Y. *et al.*, 1997 and references therein), may have occurred at Shimentai, but more specific and up-to-date information is required.

Birds

- Forty-two bird species were recorded from Shimentai (Table 2). Abundance and richness were rather low, probably due to adverse weather during our visit.
- The most frequently encountered species were Chestnut Bulbul *Hemixos castanonotus* and Plain Prinia *Prinia inornata*.

Table 2. Birds recorded at Shimentai National Nature Reserve, 13-14 August 2000. Sequence follows Clements (2000).

Scientific name	English name
<i>Ixobrychus cinnamomeus</i>	Cinnamon Bittern
<i>Egretta garzetta</i>	Little Egret
<i>Spizaetus nipalensis</i>	Mountain Hawk Eagle
<i>Falco tinnunculus</i>	Common Kestrel
<i>Centropus sinensis</i>	Greater Coucal
<i>Eurystomus orientalis</i>	Dollarbird
<i>Megalaima virens</i>	Great Barbet
<i>Megalaima oorti</i>	Black-browed Barbet
<i>Blythipicus pyrrhotis</i>	Bay Woodpecker
<i>Alcedo atthis</i>	Common Kingfisher
<i>Hirundo rustica</i>	Barn Swallow
<i>Hirundo daurica</i>	Red-rumped Swallow
<i>Motacilla alba</i>	White Wagtail
<i>Spizixos semitorques</i>	Collared Finchbill
<i>Pycnonotus jocosus</i>	Red-whiskered Bulbul
<i>Pycnonotus sinensis</i>	Light-vented Bulbul
<i>Pycnonotus aurigaster</i>	Sooty-headed Bulbul
<i>Hemixos castanonotus</i>	Chestnut Bulbul
<i>Myophonus caeruleus</i>	Blue Whistling Thrush
<i>Prinia atrogularis</i>	Hill Prinia
<i>Prinia flaviventris</i>	Yellow-bellied Prinia
<i>Prinia inornata</i>	Plain Prinia
<i>Copsychus saularis</i>	Oriental Magpie Robin
<i>Rhyacornis fuliginosus</i>	Plumbeous Water Redstart
<i>Enicurus schistaceus</i>	Slaty-backed Forktail
<i>Garrulax pectoralis</i>	Greater Necklaced Laughingthrush
<i>Garrulax maesi</i>	Grey Laughingthrush
<i>Garrulax canorus</i>	Hwamei

Scientific name	English name
<i>Pomatorhinus ruficollis</i>	Streak-breasted Scimitar Babbler
<i>Stachyris ruficeps</i>	Rufous-capped Babbler
<i>Alcippe morrisonia</i>	Grey-cheeked Fulvetta
<i>Yuhina castaniceps</i>	Striated Yuhina
<i>Yuhina zantholeuca</i>	White-bellied Yuhina
<i>Parus major</i>	Great Tit
<i>Dicaeum cruentatum</i>	Scarlet-backed Flowerpecker
<i>Lanius schach</i>	Long-tailed Shrike
<i>Acridotheres cristatellus</i>	Crested Myna
<i>Urocissa erythrorhyncha</i>	Red-billed Blue Magpie
<i>Dendrocitta formosae</i>	Grey Treepie
<i>Lonchura striata</i>	White-rumped Munia
<i>Lonchura punctulata</i>	Scaly-breasted Munia
<i>Melophus lathami</i>	Crested Bunting

- Mountain Hawk Eagle *Spizaetus nipalensis*, Common Kestrel *Falco tinnunculus* and Greater Coucal *Centropus sinensis* are Class II Protected nationally.
- Rather few forest specialists were recorded.

Reptiles and Amphibians

- Thirteen species of amphibian and ten species of reptile (four lizards and six snakes) were recorded at Shimentai during the survey (Table 3).
- One frog and one lizard species could not be firmly identified and are provisionally assigned to *Amolops chunganensis* and *Platyplacopus kuehnei*.
- The record of *Megophrys mangshanensis* is a southern range extension. It was previously known only from Mangshan in Hunan and Chebaling in Guangdong.
- In addition, many *Pachytriton labiatum* newts were confiscated by the local Forestry Bureau. They were reportedly collected from the Shimentai area.

Table 3. Amphibians and reptiles recorded in Shimentai National Nature Reserve, 13-14 August 2000. No species were recorded at Chiniu Keng (570-780 m). Sequence follows Zhao E.-M. & Adler (1993).

Species	Habitat
AMPHIBIA	
<i>Megophrys mangshanensis</i>	stream
<i>Vibrissaphora liui</i>	stream
<i>Bufo melanostictus</i>	village
<i>Hyla sanchiangensis</i>	riparian forest
<i>Amolops</i> (cf. <i>chunganensis</i>) sp.	stream
<i>Amolops ricketti</i>	stream
	forest
<i>Paa exilispinosa</i>	stream
<i>Rana limnocharis</i>	paddy field
<i>Rana livida</i>	stream
	forest edge
<i>Rana versabilis</i>	stream
<i>Polypedates megacephalus</i>	forest
	paddy field
<i>Microhyla ornata</i>	paddy field
<i>Microhyla pulchra</i>	forest
REPTILIA	
<i>Platyplacopus</i> (cf. <i>kuehnei</i>) sp.	tall shrubland
<i>Acanthosaura lepidogaster</i>	forest
<i>Calotes versicolor</i>	abandoned field
<i>Sphenomorphus indicus</i>	forest
<i>Amphiesma stolatum</i>	paddy field
<i>Pareas margaritophorus</i>	forest edge
<i>Sinonatrix aequifasciata</i>	stream
<i>Sinonatrix percarinata</i>	forest seep
<i>Xenochrophis piscator</i>	channel
<i>Naja atra</i>	abandoned field

- *Megophrys mangshanensis* is of particular conservation concern, as it is known from just three areas.
- *Shinisaurus crocodilurus* (Crocodile Lizard) has recently been reported from the area bordering Luokeng (Wang Min, South China Agricultural University, pers. comm. September 2002). The origin of the population is unknown.
- The presence of many forest stream amphibians indicates that the streams and forest at Danzhu Keng are still intact.

Fish

- Seventeen freshwater fish species were recorded from Shimentai National Nature Reserve (Table 4).
- Two species (*Oryzias* sp. and *Rhinogobius* sp.) could not be firmly identified. The *Oryzias* sp. is different to typical *O. latipes* and *O. curvinotus* of South China and could represent a new record for China (M. Kottelat, Switzerland, pers. comm., June 2001).
- The most frequently encountered species across the nature reserve were *Acrossocheilus parallens*, *Pseudogastromyzon changtingensis tungpeiensis* and *Macropodus opercularis*. At the time of our visit, the most abundant species at Shuitou Cun were *Rhodeus ocellatus* and *Oryzias* sp., while the most abundant at Danzhu Keng were *A. parallens* and *P. changtingensis tungpeiensis*. The latter species was also dominant in the Qianjin Cun area.

Table 4. Freshwater fish recorded from Shimentai National Nature Reserve, Guangdong, 13-14 August 2000. Sequence of families follows Nelson (1994). "*" = Nomenclature follows Pan (1991).

Species
<i>Rasbora steineri</i>
<i>Opsariichthys bidens</i>
<i>Nicholsicypris normalis</i>
<i>Rhodeus ocellatus</i>
<i>Puntius semifasciolatus*</i>
<i>Acrossocheilus parallens</i>
<i>Acrossocheilus beijiangensis*</i>
<i>Acrossocheilus elongatus</i>
<i>Onychostoma barbatula</i>
<i>Pseudogastromyzon fangi</i>
<i>Pseudogastromyzon changtingensis tungpeiensis</i>
<i>Schistura fasciolata</i>
<i>Pelteobagrus intermedius</i>
<i>Oryzias</i> sp.
<i>Rhinogobius giurinus</i>
<i>Rhinogobius</i> sp.
<i>Macropodus opercularis</i>

- A number of species recorded have restricted global range and are infrequently recorded during KFBG surveys:
 - *Acrossocheilus beijiangensis* is restricted to Guangdong and Guangxi;
 - *Rasbora steineri*, *Acrossocheilus elongatus*, *Pelteobagrus intermedius* and *Oryzias* sp. are restricted to the northeast Indochina region;
- Fish diversity in the Qianjin Cun area was quite high and the habitats of Shuitou Cun had species restricted to unpolluted low-lying water (e.g. *Rasbora steineri* and *Oryzias* sp.). The fish fauna at both sites was of conservation interest.
- Fifty-two species of freshwater fish were recorded in a more comprehensive fish survey conducted in 2001; fish diversity was particularly high in the Shimentai and Shuitou areas (CXL, *in litt.*, March 2003). Noteworthy species reported, which were not recorded during our survey, include *Parazacco spilurus*, *Parasinilabeo assimilis*, two predatory centropomids (*Coreoperca whiteheadi* and *Siniperca kneri*), *Rhinogobius yaoshanensis* and unidentified specimens in the genera *Schistura*, *Pseudobagrus* and *Rhinogobius*. Fish diversity of Shimentai is therefore very high.

Dragonflies

- Only 23 species were recorded during the survey (Table 5), of which four (*Vestalis* sp., *Indocnemis* sp., *Planaeschna* sp. and *Cephalaeschna* sp.) remain unidentified. The rather low number is partly due to adverse weather during the visit.

Table 5. Dragonflies recorded at Shimentai National Nature Reserve, 13 August 2000. Sequence of families follows Schorr *et al.* (2001a, 2001b).

Species
<i>Archieura incarnata</i>
<i>Vestalis</i> sp.
<i>Rhinocypha drusila</i>
<i>Pseudagrion spencei</i>
<i>Pseudagrion pruinosum</i>
<i>Bayadera melanopteryx</i>
<i>Coeliccia cyanomelas</i>
<i>Indocnemis</i> sp.
<i>Aeshna ornithocephala</i>
<i>Anax guttatus</i>
<i>Planaeschna</i> sp.
<i>Cephalaeschna</i> sp.
<i>Leptogomphus perforatus</i>
<i>Ophiogomphus sinicus</i>
<i>Ictinogomphus pertinax</i>
<i>Brachythemis contaminata</i>
<i>Orthetrum glaucum</i>
<i>Orthetrum sabina</i>
<i>Palpopleura sexmaculata</i>
<i>Pantala flavescens</i>
<i>Rhyothemis variegata</i>
<i>Sympetrum parvulum</i>
<i>Trithemis aurora</i>

- The unidentified *Vestalis* sp., *Indocnemis* sp., *Planaeschna* sp. and *Cephalaeschna* sp. may be of conservation significance.
- The presence of forest-dependent dragonfly genera, such as *Vestalis*, *Bayadera*, *Indocnemis*, *Planaeschna* and *Cephalaeschna*, indicate the presence of high-integrity forest in the study area.

Butterflies

- Thirty species were recorded during the two-day survey (Table 7). The rather low number partly reflects adverse weather during our visit.
- These included two species (*Lethe* sp. and *Neptis* sp.) which are currently unidentified.
- *Halpe homolea* was not recorded from Guangdong by Chou (1994) or Bascombe (1995).

Table 7. Butterflies recorded at Shimentai, 13-14 August 2000. Sequence of families follows Bascombe (1995).

Species	13 Aug	14 Aug
<i>Celaenorrhinus aurivittata</i>	✓	
<i>Halpe homolea</i>	✓	
<i>Iambrix salsala</i>	✓	
<i>Graphium agamemnon</i>	✓	
<i>Lamproptera curius</i>	✓	
<i>Papilio paris</i>	✓	✓
<i>Papilio polytes</i>	✓	
<i>Papilio protenor</i>	✓	
<i>Ixias pyrene</i>	✓	
<i>Acytolepis puspa</i>	✓	
<i>Arhopala rama</i>	✓	
<i>Dodona eugenes</i>		✓
<i>Miletus boisduvali</i>	✓	
<i>Nacaduba kurava</i>		✓
<i>Taraka hamada</i>	✓	
<i>Athyma perius</i>	✓	✓
<i>Athyma selenophora</i>	✓	
<i>Bassarona kosempona</i>		✓

Species	13 Aug	14 Aug
<i>Cirrochroa tyche</i>	✓	
<i>Cyrestis thyodamas</i>	✓	
<i>Danaus genutia</i>	✓	
<i>Euploea midamus</i>	✓	
<i>Ideopsis similis</i>	✓	
<i>Precis (Junonia) almana</i>	✓	
<i>Precis (Junonia) orithya</i>	✓	
<i>Lethe</i> sp.		✓
<i>Melanitis leda</i>	✓	
<i>Melanitis phedima</i>	✓	
<i>Neptis</i> (cf. <i>miah</i>) sp.	✓	
<i>Ypthima lisandra</i>	✓	✓

- The unidentified *Lethe* sp. and *Neptis* sp. are of potential conservation interest.
- A number of species recorded are typical of forest habitat, indicating the presence of high-integrity forest in the study area.

Summary of flora and fauna

- The survey team was unable to assess the vegetation of the whole reserve; that of the surveyed area was mainly patches of old-growth secondary forest in a matrix of young disturbed forest and grass/shrubland or tall shrubland. Mature secondary forest was found in steep ravines and hillsides behind villages. There was reportedly very good mature forest (with trees >1m dbh) between Shimentai and Luokeng Nature Reserves.
- The present survey recorded 445 vascular plant species in two days of fieldwork, suggesting the reserve has a fairly rich flora. While most species found are common and widespread, eight were globally Threatened, nationally Protected and/or globally restricted.
- The herpetofauna included *Megophrys mangshanensis*, known from just three areas in North Guangdong and South Hunan. The fish diversity was very high with up to 60 species recorded, with the Shimentai and Shuitou areas having the most diverse fish communities, and contained several species of conservation interest. A population of *Shinisaurus crocodilurus* (Crocodile Lizard) was recently reported from around Luokeng Nature Reserve (where it has also recently been recorded).
- The terrestrial fauna was quite poorly sampled in the two-day survey. Rather few birds were recorded, due partly to adverse weather during the survey. However, a number of forest-dependent birds, reptiles, amphibians, dragonflies and butterflies were present. The reported mature forest area on Chuandi Ding is likely to have a more complete terrestrial biota than the areas surveyed, and is even reported to be a migration route for Tiger.
- The biodiversity significance of Shimentai was not assessed by MacKinnon *et al.* (1996). The present findings suggest it is of high biodiversity significance on a local scale, and may be of national significance if the remote parts contain more species and habitats of importance.

Threats and problems

- Much past degradation has taken place at Shimentai, and overall forest cover was rather low in the areas surveyed. The extensive grassland/shrubland in the Qianjin Cun and Baowu areas was quite degraded, apparently through fires and farming activities.
- Fish abundance in the main stream at Danzhu Keng was quite low, indicating overfishing - villagers were reported to use electrofishing. Discarded torch batteries were common in upper reaches of Danzhu Keng suggesting nocturnal collection of stream frogs and possibly turtles. The calls of the large-bodied *Paa* stream frogs were rarely heard, indicating they have been over-collected. Collection of stream fauna for commerce was confirmed with the confiscation of hundreds of *Pachytriton* newts collected locally. It would appear that residents have a high incentive to exploit the faunal resources, but not to do so sustainably.
- There were apparently some points of contention between Shimentai and the neighbouring Luokeng Nature Reserves, including the precise boundaries at the Chuandi Ding Mountain. These might need to be addressed for effective cooperation in patrolling and landscape/wildlife management, especially

for wide-ranging wildlife such as mammals and birds.

- Shimentai has an aggressive plan to promote tourism, which could heighten ecological impacts but could also provide benefits if decision-making is holistic, with a strong environmental-awareness component included.

Opportunities

- Besides the more inaccessible forest on steep cliffs and in the mountains there was a small but very mature lowland Feng shui wood behind Shuitou Cun, and a healthy secondary forest adjoining it, indicating that residents placed value on these habitats. For completeness the reserve boundaries might be extended to include these lowland ecotypes, but it is also important to ensure the forest stewardship is continued and encouraged, and extended to protect the biota (e.g. fish and frogs) from over-exploitation.
- The reserve has a large degraded area that the reserve officials would like to restore to forest. Regeneration of forest in the grassland/shrubland in the Qianjin Cun area would allow connection of the currently fragmented ravine forest and greatly enrich the conservation value of the whole area. This could occur naturally, as the mature ravine forest should provide a sufficient seed source if fire is effectively prevented. However, given the dense grass cover, regeneration would be slow. It could be enhanced by reforestation with an assembly of native species similar to the native forest.
- The northern side of Shimentai Nature Reserve is connected with Luokeng Provincial-level Nature Reserve (Qujiang County) and Dabu County-level Nature Reserve (Ruyuan County) in Shaoguan City District (South China Agricultural University & Shimentai Provincial Nature Reserve Management Authority, 2000). Some form of administrative merge or exchange with these reserves in Shaoguan City District would enable better cooperation in patrolling and managing the forest and biodiversity on the Chuandi Ding range.
- Parts of Shimentai are of interest to tourists. Each year hikers from Hong Kong go to climb Chuandi Ding, while the gorge at Ludong is also a potential attraction. Stable revenue might be generated from hiking and activities with an ecotourism element, to assist in funding conservation.

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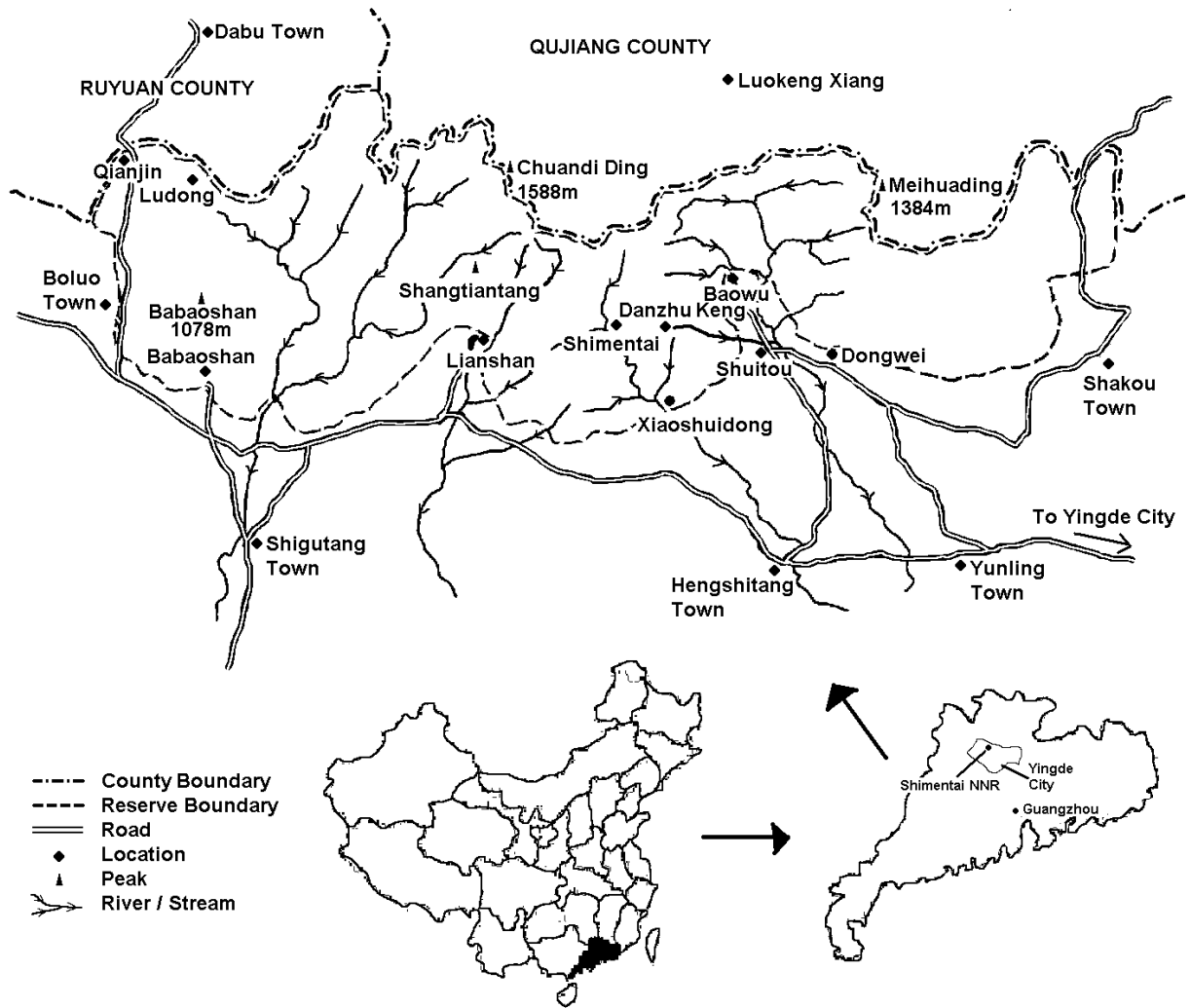


Figure 1. Map showing location of Shimentai National Nature Reserve, North Guangdong, China.