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**NOTES ON SOME ECOLOGICAL
ASPECTS OF GONGGA SHAN AND
HAILOUGUO GEOPARK
SICHUAN, CHINA**

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April 2006

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HAILOUGUO NATIONAL GEOPARK, SICHUAN, CHINA, APRIL 2006.

Gongga Shan, the highest peak in Sichuan at 7556 meters (24,790'), rises towards the extreme eastern edge of the Tibetan Uplift. The Hailuoguo National Geopark protects part of the fragile environment on the mountain's eastern flank. A visitor to this park has an opportunity, on a leisurely three-day excursion from Chengdu and areas along the western edge of the Sichuan Basin, to see dramatic mountain scenery, traditional land use areas, interesting geological formations, and a splendid sampling of Sichuan temperate forests

Thirty-seven participants of a workshop designed by Future Generations for staff working on southeast Tibet's Four Great Rivers Environmental Protection Plan visited the southern base of the Gongga Shan and this geopark on 29 April 2006.

To reach the mountain from Chengdu we drove southwest from the city past numerous fields of mustard and other crops, including some tea, and then turned west into the foothills of the Tibetan Uplift. Here the east-facing slopes were covered by subtropical vegetation of a secondary nature, the thick growth indicating considerable rainfall, the moisture likely derived, in part, from the China summer monsoons.

Near the top of the ridge we passed through a long tunnel to emerge onto a west-facing slope and into a distinct rain-shadow region where *Pinus* and other dry-country species were evident. From the tunnel, the road descended sharply to the Dadu and crossed the river at about 1370 meters. Available terraces near the river were occupied by settlements and fields in a traditional use zone while nearby slopes, extending steeply upward for some 300 meters, appeared comparatively dry with soil erosion evident. At about 1650 meters we arrived at Moxi, a town with many overnight accommodations.

The Gongga Base Station of the Chinese Ecosystem Research Network where scientists study multi-zonal mountain ecosystems is housed in Moxi. The town and the surrounding terrain lies in a transition zone that displays plants from both subtropical and warm temperate belts. For example, along the road leading into town we saw bushes of both *Debregeasia* (subtropical) and *Coriaria* (warm temperate) growing together. In addition, we noted several Brown-breasted Bulbuls, *Pycnonotus xanthorrhous*, calling prominently from tall trees at the edge of town. This bird is found only in China and northern Southeast Asia and favors subtropical to warm temperate hill country

Visitors wishing to proceed beyond Moxi are required to use park busses and this is a splendid regulation as using these vehicles greatly reduces tourist impact to the



A village near Moxi at ca. 1700 meters.

sensitive area. Ascending in park buses, we passed through agricultural areas and bushy country into warm temperate forest and then stopped at ca 2680 meters to let visitors off at the Pingxuen hot springs.

Around Pingxuen, the hemlocks, *Tsuga dumosa*, and spruces, *Picea brachytyla*, mixed with hardwoods such as maples, *Acer*, indicated that we had now reached a transition zone near the lower edge of a Sichuan cold temperate forest. At this altitude, *Rhododendron* grew under the taller trees with *Rosa*, *Ribes*, *Viburnum* and bamboos (likely *Sinoaurindinaria*) in openings while a blue-flowered *Corydalis* bloomed prominently on steep banks. And a small rhododendron with pink flowers growing epiphytically on large deciduous hardwoods spoke of an extremely moist habitat. The China summer monsoon likely combines with the height of Gongga to produce a remarkably wet microclimate here which stands in impressive contrast to the dry slopes near the Dadu.

A special feature of Pingxuen is a large conglomerate boulder, possibly a glacial erratic, deposited near the hot springs. The boulder is well marked with an interpretive sign in Chinese and English. Three endangered Chinese Yews, *Taxus wallichiana* var.

chinensis, six spruces, *Picea brachytyla*, and several rhododendrons (translated into English on the sign as “cuckoos”), grew from the thin soil layer on top of this boulder. Many visitors pass the boulder as they take to the waters of the hot springs.

Birds noted near the hot springs were primarily warm temperate species and included two Streak-throated Fulvettas, *Fulvetta cinereiceps*, six Green backed Tits, *Parus monticolus*, a male and two female Mrs Gould’s Sunbirds, *Aethopyga gouldiae*, ten Pale-rumped Leaf warblers, *Phylloscopus chloronotus*, three Golden-spectacled Warblers, *Seicercus burkii*, one Rufous-gorgetted Flycatcher *Muscicapa strophciata*, and four Red-billed Blue Magpies *Urocissa erythorhyncha*. An Oriental Cuckoo, *Cuculus saturatus*, called from across the valley.



Chinese yews, spruces, bamboos and rhododendrons grow atop a large metaconglomerate rock at Pingxuen at 2680 meters.

Above Pingxuen, a splendid cold temperate forest with hemlocks, firs and spruces, many festooned with hanging lichens [*Usnea* or *Bryoria*], surrounded a marsh-edged lake at ca 1830 meters. Some of the conifers here were remarkably large and one report mentions a hemlock core that yielded a count of 606 rings. The lower story of this forest consisted primarily of rhododendrons and bamboos while the forest floor was carpeted with mosses in which grew a ground-hugging euphorb with rounded, scalloped bracts

terminal leaves yellow-tinged towards the tips, a white *Fragaria* and a pink *Oxalis*, among others.

A parking area and a boardwalk leading into the forest provides easy access to the lake's edge. This walkway greatly reduces visitor impact and authorities are to be congratulated on this effort.



A board walk leads to a forest-fringed lake at 2700 meters.

Near the lake we noted two Long-tailed Minivets, *Pericrocotus ethologus*, along with a Yellow-browed Tit, and several *Phylloscopus* sp. A Large-billed Crow, *Corvus macrorhynchus*, cawing to the north, was the only crow noted during the excursion.

Although many mammals are recorded from the area, we saw none during our Hailouguo visit but did find on the forest floor near the lake a large rodent skull that was in excellent condition except for a missing lower jaw. Given the altitude and mixed, old growth conifer habitat, we assumed the skull was likely that of a Giant Flying Squirrel, *Petaurista petaurista*.

Towards the end of the road, we passed a hotel at about 3000 meters where accommodations and food was available and then reached the end of the bus line at about 3100 meters.

This terminus is carved from a superb fir forest and the view of Gongga Shan, framed by firs, likely *Abies fabri*, was stunning. Trees under the fir canopy featured *Betula* and *Rhododendron* while bushes in openings included *Salix* and numerous *Ribes* along with some bamboo. The lower trunks of the firs sported mosses, lichens, and clumps of hanging *Polypodium* ferns while the ground cover consisted primarily of mosses in which lichens were prominent; a club moss and ferns were also noted.

One observer commented that this forest was “not in good condition.” Indeed the forest did not look “tidy,” but it was a splendid example of a mature, old growth fir forest where many tops of old trees are broken off and downed logs, often covered with moss, are strewn over the forest floor.

The forest near the road head was relatively quiet as birds were comparatively inactive late in the morning. However, in the distance, a short, lilting song was likely from a Black Tit, *Parus rubidiventris*. We did see two Long-tailed Minivets land towards the top of a tall fir. This species is usually considered a warm temperate bird (in summer) but here it had moved up into the next higher forest biome.

In addition, a party of seven extraordinarily confiding Red-billed Blue Magpies surprised us, one bird picking through a trash bin at the edge of the road head complex. This species is usually associated with subtropical and warm temperate elevations but here it had moved up into fir forest, a niche usually occupied in similar Himalayan settings by the allopatric and closely related Yellow-billed Blue Magpie, *Urocissa flavirostris*.



Gongga Shan, 7556 meters, through fir, *Abies*, trees near the bus terminus

Visitor impact at the bus terminus appeared to be confined to the terraces, restaurants, and shops. And while the commotion of the road head was quite audible some 100 meters into the forest, we saw little physical visitor impact at that distance. On 29 April,

the condition of the forest floor indicated a fairly recent snow melt-back so it could be that later in the year impact might be more noticeable.

Beyond the bus terminus, gondolas of a cable car system, purchased in 2001 from Austria, takes visitors some 3.5 km. over fir forest and seracs to 4200 meters where platforms and walkways offer fine views of the glacier and the mountain. Again, authorities are to be congratulated as this infrastructure greatly reduces visitor impact to this fragile and very special region. At the tree line, the fir forest changed to bushy rhododendrons on a north-facing slope and to a small, still un-leafed, deciduous tree, likely a *Betula*, on the opposite side.

Summary: A leisurely three-day excursion from Chengdu to Gongga Shan and the Hailougou National GeoPark offers a splendid opportunity to see varying land use practices along with superb mountain vistas, interesting geology, and fine old growth Sichuan temperate forests.

Acknowledgements: Special thanks are due John Lefebvre and the David Suzuki Foundation, Vancouver, Canada. Future Generation China Country Director Frances Fremont-Smith organized the workshop that was attended by staff working in Tibet's Four Great Rivers area. David Martin of the Suzuki Foundation and Lance Craighead of Craighead Environmental Research Center, Bozeman MT, assisted with instruction.

For further reference see:

eFloras.org. gives access to *Flora of China* [11 out of 24 volumes currently completed]. *Gonggashan Mountain Vegetation of China*. 1985. In Chinese.

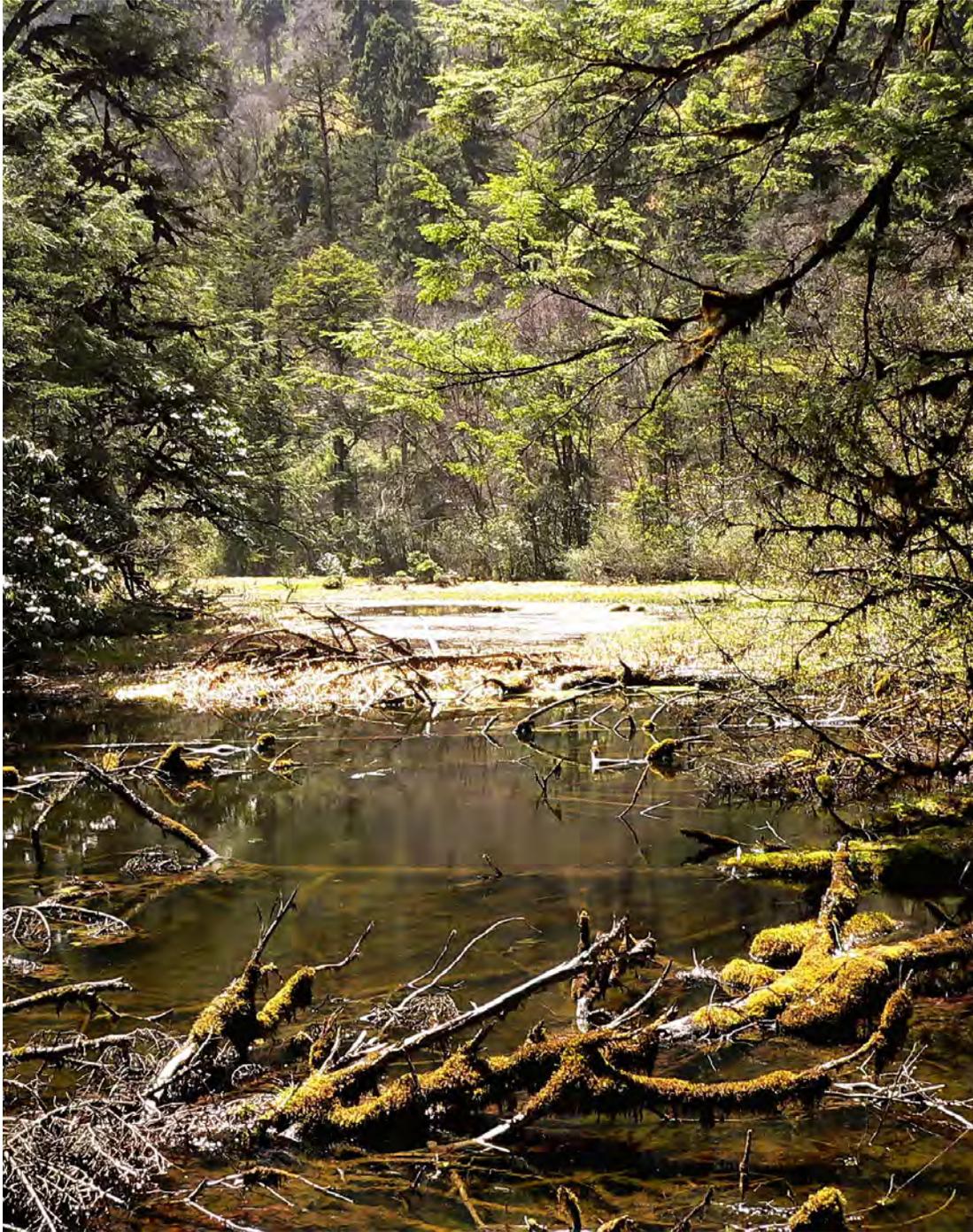
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**At the end of the field trip, workshop participants assembled at Dujiang,
China's first irrigation site.**

End Page



The small lake at c. 2700 meters fringed with hemlock, *Tsuga dumosa*, on the left and Rhododendrons on the right. Massive hemlocks as well as Spruce, *Picea brachytyla*, grow in this basin.