

SCLATER'S MONAL

Lophophorus sclateri

Critical —
Endangered —
Vulnerable C1; C2a



This striking pheasant is poorly known across all of its remote, inaccessible and relatively restricted range. It is classified as Vulnerable because it probably has a small population which is naturally fragmented and subject to a significant decline.

DISTRIBUTION Sclater's Monal occupies a restricted range in the area where India, Myanmar, Tibet and Yunnan meet (Ali and Ripley 1968–1998, Smythies 1986). In India a newly discovered but as yet unnamed subspecies probably occupies a restricted range from eastern Tawang (Towang) district to western Upper Subansiri district (Kumar and Singh 1998, 1999a,b,c, 2000; see Remarks 1).

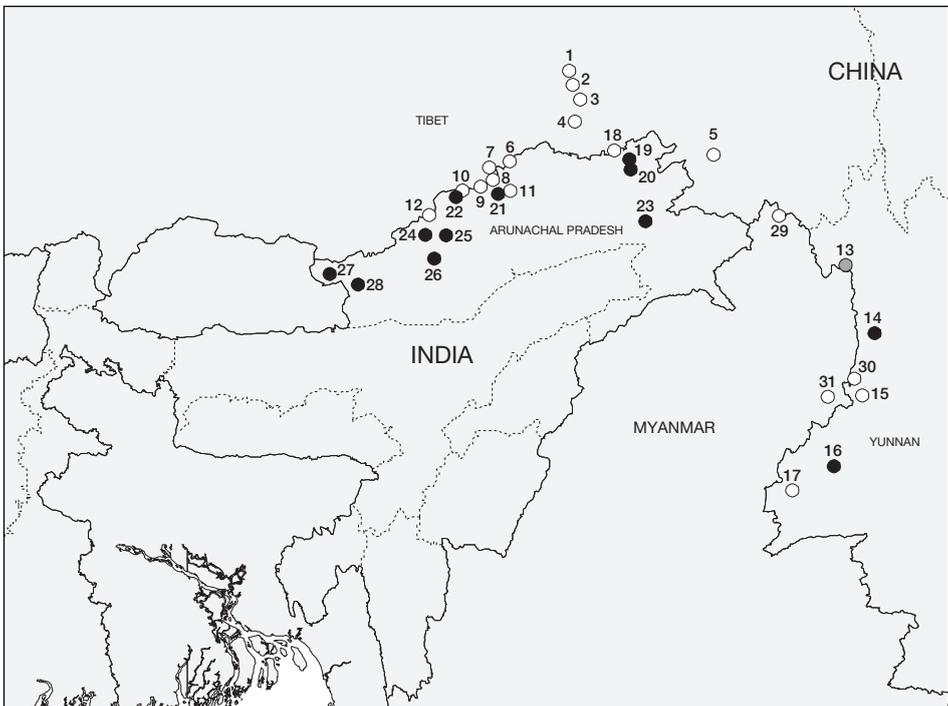
■ **CHINA** The species occurs in the mountains of south-east Tibet and western Yunnan, close to the Chinese borders with India and Myanmar (see Remarks 2). Ludlow (1951) “heard reports” of the species from the Yigrong and Po Tsangpo valleys. Apart from untraceable localities such as “mountains near the Salwin source” in Yunnan, male, 1910 (Rothschild 1926), and close to the Burmese frontier, within north-western Yunnan, undated (Peacock 1933), records are from:

■ **Tibet Pome**, 1913 (Bailey 1916a); **Trulung**, February 1947, 2,900 m, and 2–3 shot in May 1947 (Himalayan Monal *Lophophorus impejanus* occurs in the same valley) (Ludlow ms, 1951, male in BMNH); **Po Tsangpo confluence**, Tsangpo gorge, December 1924, 2,750 m (female and juvenile male in BMNH, Kinnear 1934, A. E. Ward in Ludlow and Kinnear 1944); **Nam La** pass, foot of Namcha Barwa, heard calling, May 1947 (Ludlow ms, 1951); **Ata Kang La**, near Shugden Gumpa, Zayu county, undated but presumably 1920s (A. E. Ward in Ludlow and Kinnear 1944); **Tum La** (see Remarks 2), head of the Nayu Chu, Nyingchi county, July 1938 (Ludlow and Kinnear 1944); **Lo La** (see Remarks 2), Pachakshiri, four males and two females, 3,350–4,000 m, May 1938 (Ludlow and Kinnear 1944, also Davison 1978); **Chudi Chu** valley, five males on cliff faces, 3,350 m, around 1938 (Ludlow ms); **Tsari Sama** (see Remarks 2), Langong (Laugong) valley, Mainling county, June 1938 (Ludlow and Kinnear 1944); **Na La** (see Remarks 2), above Migyitun, 3,800 m, three males (and the remains of one killed the previous year), May 1936 (Ludlow ms, Ludlow and Kinnear 1944); **Nyug La**, around 1938 (Ludlow ms); main range above **Lung** (see Remarks 2), Chayul valley, reliably reported in April–May 1936 (Ludlow and Kinnear 1944);

■ **Yunnan Gongshan county**, collected in the Gaoligong mountains, June 1938 and September 1939 (two specimens in ASCN), at Dongshaofang, 3,000 m, June 1973 (Peng Yanzhang *et al.* 1980, male in KIZCN), Xishaofang, 3,000 m, June 1973 (female in KIZCN) and Bapo Sandui, 2,600 m, November 1973 (three specimens in KIZCN), recorded at Bridge 12, Mount Gongshan, May 1973 (Peng Yanzhang *et al.* 1980), reported by local people in Gongshan county (and areas to the north) during surveys in 1992–1994 (Ma Shilai *et al.* 1994), on Ernaozi Shan, Gaoligong Shan mountains, April–May 1999 (M. Kilburn *per C. Ma in litt.* 1999), and also recorded in Nu Jiang Nature Reserve (Liu Donglai *et al.* 1996; see Han Lianxian 1996); **Biluo Xueshan**, Bijiang county, collected at 3,000–4,000 m, May and July 1978 (two specimens in KIZCN), and recorded there during a survey, May–August 1985 (Lu Taichun 1991, five specimens in ASCN); **Lushui county** (see Remarks 2), a male collected 29 km east-north-east of Hpimaw (in Myanmar), May 1934 (male in BMNH) and several undated records from the

same area (Stanford 1935, Stanford and Ticehurst 1935b, 1938–1939); **Tengchong county**, collected in or nearby at “Kai Tou, Tengyueh”, January–February 1931 (two specimens in BMNH), and on the “Shweli–Salwin divide”, August–September 1925, 3,350–3,650 m (seven specimens in AMNH and MCZ, Rothschild 1926), collected at Datang, May 1965 (two specimens in ASCN), July 1974 (Peng Yanzhang *et al.* 1980), recorded north of Datang during surveys in 1992–1994 (Ma Shilai *et al.* 1994), and recorded in Gaoligong Shan National Nature Reserve (Liu Donglai *et al.* 1996; see Han Lianxian 1996), including several in 1998 (B. F. King verbally 1998); **Yingjiang county** (see Remarks 2), recorded in or near to this county near “Sin-Ma-How” (Sima, in Myanmar), “on the Yunnan side of the border”, male collected and two other birds seen, reportedly at 2,000 m (a remarkably low altitude for this species and possibly in error), winter 1910 (Beebe 1936; also Smythies 1986).

■ **INDIA** Historically this pheasant was thought to be present east of 92°–93° E in northern areas of Arunachal Pradesh (Ali and Ripley 1968–1998), specifically including the districts of Kameng, Subansiri, Siang and Lohit, contiguous with parts of north-east Myanmar, Yunnan, China, and south-eastern Tibet (Ali and Ripley 1968–1998). This remains the case today although the species is now known to range eastwards almost to the Bhutan border. There is an unspecified historical record from “Eastern Assam”, pre-1895 (female in BMNH), but, as the state then included Arunachal Pradesh, this specimen is likely to have derived



The distribution of Sclater's Monal *Lophophorus sclateri*: (1) Pome; (2) Trulung; (3) Po Tsangpo confluence; (4) Nam La; (5) Ata Kang La; (6) Tum La; (7) Lo La; (8) Chudi Chu; (9) Tsari Sama; (10) Na La; (11) Nyug La; (12) Lung; (13) Gongshan county; (14) Biluo Xueshan; (15) Lushui county; (16) Tengchong county; (17) Yingjiang county; (18) Yongyap La; (19) Dibang Valley Wildlife Sanctuary; (20) Mipi; (21) Machuka; (22) Taksing; (23) Mishmi hills; (24) Pakdhung; (25) Damin; (26) Sarli; (27) Tawang; (28) Chander; (29) Adung valley; (30) Chimili hills; (31) Htawngaw hills.

○ Historical (pre-1950) ● Fairly recent (1950–1979) ● Recent (1980–present)

from the Mishmi hills (see *Stray Feathers* 2 [1874]: 488–489). In addition, several have been purchased at Sadiya, Assam, including one male, July 1874 (Beebe 1910), and one female, undated (Godwin-Austen 1879b), but these were brought down from the high mountains (i.e. the Mishmi hills) by local people (Beebe 1918–1922) and thus there is no record from the state of Assam. Several sites at which locals reported the presence of the species in 1998 have been included because its distinctiveness suggests they very likely to be correct. Confirmed or very likely records are from:

■ **Arunachal Pradesh Yongyap La** (see Remarks 2), Upper Dibang valley, 1913 (Bailey 1916a); **Dibang Valley Wildlife Sanctuary**, fresh tail-feather fan seen near Annini, supposedly from a bird killed nearby, January–February 1994 (Kaul *et al.* 1995a), while the clutch from the “Abor hills”, early June, 1900–1909, was supposedly from north of Sadiya (Baker 1922–1930, BMNH egg data) and thus most probably in the Dibang catchment; **Mipi**, feathers seen, December 1997 (Singh 1999); **Machuka** (Mechukha), West Siang, January 1995 (Kaul 1995a); **Taksing** (Taksing Post), Upper Subansiri, reported, 1998 (Kumar and Singh 1999); **Mishmi hills** (see Remarks 3), at the upper Don river, east of Sadiya, undated (male in YPM), unspecified locality in December 1879 (male in BMNH), at the Tsu river, 2,400 m, March 1913 (male in BMNH, two males in BNHS, Abdulali 1968–1996), at Sumdo, Mishmi hills, 2,800 m, May 1913 (male in NRM), at Furzz, Delei valley, April 1927 (female in YPM), with several tail fans purchased from locals, 1946–1947 (Ali and Ripley 1948) and reliable reports, January–March 1990 (Katti *et al.* 1990); **Pakdhung**, 4,000 m, October 1998 (Kumar and Singh 1999a); **Damin**, Lower Subansiri, two tail feathers seen, 1998 (Kumar and Singh 1998, 1999a); **Sarli**, Lower Subansiri, tail feathers and complete skins, 1998, and nearby at Milli, one intact tail feather seen and reported at Koloriang, 1998 (Kumar and Singh 1998, 1999a); **Tawang**, reported, 1998 (Kumar and Singh 1999a); **Chander**, West Kameng, reported, 1998 (Kumar and Singh 1999a); Jhara (untraced), Lower Subansiri, reported, 1998 (Kumar and Singh 1999a); Minchar (untraced), East Kameng, reported, 1998 (Kumar and Singh 1999a).

■ **MYANMAR** Its range probably once extended through the higher frontier mountains from Tapubum northwards, including the Hpimaw area and the Htawgaw hills (Stanford 1935, Stanford and Ticehurst 1935b, 1938–1939). Two males were reportedly taken at Myitkyina, October 1925 (Kinnear 1934), although given the known range and habitat of the species this was presumably “only roughly true” (Stanford and Ticehurst 1938–1939). Records are from: **Adung valley**, 3,300 m, maximum of 6–8, July–August 1931 (Kinnear 1934, Ludlow and Kinnear 1944, female in FMNH, female in BMNH); **Chimili hills**, 3,150 m, March 1948 (two specimens in BMNH, Smythies 1949); **Htawgaw hills** (see Remarks 2), between the Kachin hills and Yunnan (China), undated (specimen in BNHS, Abdulali 1968–1996), c.1913 (two specimens in BNHS, *J. Bombay Nat. Hist. Soc.* 22 [1914]: 818, Abdulali 1968–1996), three from the “Burmo–Chinese frontier”, winter, 1914 (*J. Bombay Nat. Hist. Soc.* 23 [1915]: 592, Kinnear 1934), specifically at Imaw Bum, Lauhkaung subdivision, 3,300 m, “moderately common”, July–October 1920 (Ward 1921; also Stanford and Ticehurst 1938–1939), and heard but not seen around 1939 in the “Hpawshi hills” (Stanford and Mayr 1940–1941).

POPULATION While a dearth of accurate data precludes assessment of the global population of this species, McGowan and Garson (1995) made a very rough estimate of 10,000 individuals. It should be assumed that the population far exceeds the low numbers implied by the records and reports listed above simply because the bulk of its range is extremely remote and therefore rarely visited.

China Numbers are probably stable (McGowan and Garson 1995). The species was locally fairly common in Tibet during Ludlow and Kinnear’s (1944) visits, but there is no recent information from this region. It possibly survives there in reasonably high numbers. According to Lu Taichun (1991), during surveys in May–August 1985 a density of 1.0–1.2 birds per km²

was found in a 10 km² study site on Biluo Xueshan and a density of 0.8–1.0 birds per km² was found in a 20 km² study site in the Gaoligong Shan mountains. In the same region the species was thought rare by Han Lianxian (1996).

India The species was said to be “common” in the upper Dibang valley (therefore in both India and China; see Remarks 2) and on both sides of the Yongyap La (Bailey 1916a). The current status of the species in this region is difficult to assess as high altitudes have rarely been visited, and the population size remains unknown (Kumar and Singh 1999a). However, the recently discovered form of Sclater’s Monal (see Remarks 1) appears to be locally fairly common in western Arunachal Pradesh where, for example, nine sightings of 13 birds were made within 1 km of Pakdhung camp during a two-day visit in 1998 (Kumar and Singh 1999a). Locals at Mipi also said that it was “not uncommon” and easy to catch given 3–4 days (Singh 1999).

Myanmar The species is local and uncommon in the country (Smythies 1986). Ward (1921) considered it to be “moderately common” in the Htawgaw hills, around Imaw Bum, and linked this to the fact that it was “not greatly persecuted”. However, J. K. Stanford (in Stanford and Mayr 1940–1941) later stated that during his visit to the area it was “merely a voice on one occasion in the oak forest”. Hunters near Putao report that the species still occurs in the highlands of northern Myanmar, giving convincing descriptions of the species (B. F. King verbally 1998).

ECOLOGY Habitat Sclater’s Monal is a montane species generally occurring above 3,600 m (Cheng Tso-hsin 1978), or at 2,500–3,400 m (Zheng Guangmei and Wang Qishan 1998) in China, and above 3,900 m (Kumar and Singh 1999a) or at 2,000–3,000 m in India (Grimmett *et al.* 1998). Baker (1921–1930), reported (although probably without ever seeing the bird) that they spend the summer between 3,650 m and 4,550 m, descending in winter as low as 2,150 m. It probably rarely ventures below 2,500 or above 4,200 m (McGowan and Garson 1995). Smythies (1986) believed that in Myanmar it always remained above the tree-line and rarely descended below 3,000 m “even when the mountains are under deep snow”. Where this species and Himalayan Monal overlap, the former possibly occupies a higher altitudinal range than usual and the latter a lower one (Kaul *et al.* 1995a), although this remains to be confirmed (see Remarks 1).

It is reportedly found in Yunnan, China, in mossy forest, azalea forest, cedar forest, and the edge of bamboo groves (Beebe 1918–1922, Peng Yanzhang *et al.* 1980, Zheng Guangmei and Wang Qishan 1998). Birds have been encountered amongst oak and rhododendron with stretches of pine trees nearby and also in small clearings of short, thick grass and bracken with moss- and lichen-covered rocks (Baker 1921–1930). In Myanmar, they tend to frequent areas of dwarf rhododendron, juniper, cotoneaster and grass, an environment in which they are apparently well camouflaged (Smythies 1986). They also apparently occur in coniferous forest with bamboo understorey, and subalpine rhododendron scrub (Cheng Tso-hsin 1978, del Hoyo *et al.* 1994, McGowan and Garson 1995). In Tibet, birds were found in rhododendron brakes, and silver fir (*Abies*) forest with a dense rhododendron understorey (particularly in small ravines and gullies); in summer they ascended from this habitat to the “alpine zone” where they frequented rocky precipices (Ludlow and Kinnear 1944). Baker’s (1921–1930) assertion that they inhabit “very dense forest” is thus probably only seasonally true. In summer the species generally lives amongst scrub, cliffs and rocky alpine grasslands above the tree-line (Cheng Tso-hsin 1978, Smythies 1986). Moreover, in Tibet it apparently moves up to even higher altitudes after the young are hatched (Ludlow and Kinnear 1944). The recently described form in Arunachal Pradesh also frequents rocky outcrops, alpine scrub and alpine meadows above 3,900 m in summer; typical alpine scrub at one locality was characterised by various species of dwarf rhododendron, *Rubus* and *Berberis* (Kumar and Singh 1999a). Local reports suggested that this form also descends in winter into forests

dominated by fir *Abies densa* and dense thickets of bamboo *Thamnocalamus spathiflorus* (Kumar and Singh 1999a).

The species is generally encountered as solitary individuals or pairs during the breeding season, forming flocks of up to nine individuals in winter (Peng Yanzhang *et al.* 1980, del Hoyo *et al.* 1994). In Tibet, it was usually found in small groups of 2–3 (Bailey 1916a). Groups are usually very wary and difficult to approach (Stanford and Ticehurst 1938–1939).

Food Very little is known about its feeding habits. The only food items specifically mentioned are *Polygonum* seeds and thistleheads or hard-headed flower heads (Stanford and Ticehurst 1938–1939). Birds collected near Chimili Pass had their crops full of inch-long sections of roots “about the thickness of a pencil” (Smythies 1949, 1986). A male apparently observed for five minutes by Beebe (1918–1922) spent all the time scratching in earth, and had consumed “short, crooked bits of succulent rootlets” along with “surprising amounts” of earth and debris. In China birds have been reported to feed on “wild lily”, rhizomes of ferns, bamboo leaves and other unspecified leaves (Zheng Guangmei and Wang Qishan 1998). The newly discovered form in Arunachal Pradesh, India, was observed feeding on the underground tubers of cobra lily *Arisaema* (Kumar and Singh 1999a).

Breeding There are very few breeding data either from wild or captive conditions. A female collected by Smythies (1949) in Myanmar was not yet in breeding condition by late March, but the testes of a male were enlarged. In China clutches have apparently been found in April (Peng Yanzhang *et al.* 1980; but see data relating to clutch-size below). In south-east Tibet large soft-shelled eggs had developed in one female collected on 14 May 1938, and an incubating female was collected on the following day (BMNH label data, Ludlow and Kinnear 1944). A clutch was apparently collected north of Sadiya, India, between 1 and 3 June (Baker 1922–1930, 1932–1935). The species apparently nests in a hollow amongst rocks (Peng Yanzhang *et al.* 1980, Zheng Guangmei and Wang Qishan 1998). There are no reports of any breeding events in captivity (Johnsgard 1999).

The “Abor hills” clutch numbered only five eggs (Baker 1922–1930, 1932–1935). Given this and the fact that congeners tend to lay 3–5 egg clutches (Johnsgard 1999), reports of 10–12 eggs to a clutch in China (Peng Yanzhang *et al.* 1980; also Zheng Guangmei and Wang Qishan 1998) are perhaps exaggerated or erroneous (R. S. Kumar *in litt.* 1999).

Migration The species is thought essentially to be resident, although it seems to undertake altitudinal migrations (Ali and Ripley 1968–1998; see Habitat).

THREATS The Sclater’s Monal is one of nine threatened members of the suite of 19 bird species that are entirely restricted to the “Eastern Himalayas Endemic Bird Area”, threats and conservation measures in which are profiled by Stattersfield *et al.* (1998). Habitat degradation and over-exploitation of the species for food are presumably the major threats; these factors are certainly widespread in its range (del Hoyo *et al.* 1994, McGowan and Garson 1995).

Forest loss is considered a serious threat to Chinese populations of this species (He Fenqi in McGowan and Garson 1995, Zhang Zhengwang *in litt.* 1997). In India, commercial deforestation is a minor or non-existent problem as logging has been banned in relevant areas of Arunachal Pradesh (R. S. Kumar *in litt.* 1999). Nevertheless, the human population of the state comprises various tribal communities, most of which practise shifting cultivation (Kaul *et al.* 1995a, Kumar and Singh 1999a), although generally below 2,000 m, outside the altitudinal range of Sclater’s Monal (R. S. Kumar *in litt.* 1999). Very little information is available detailing the rate of deforestation in the hills of northern Myanmar, but it is felt that habitat degradation has been rapid in most areas (B. F. King verbally 1998). Ceasefires signed between the Yangon (Rangoon) government and rebel groups in northern Myanmar are apparently leading to an increase in deforestation, as the groups can now coordinate logging activities and trade with China in peace; it is possible that this development will devastate areas of forest important to the species (*Oriental Bird Club Bull.* 21 [1995]: 15–20).

Hunting is a more pertinent and immediate risk. This appears to be the case in India (R. S. Kumar *in litt.* 1999), where local people hunt pheasants for food (Kaul *et al.* 1995a, Kumar and Singh 1999a). A large number of Sclater's Monal feathers, especially the tails (used to make fans), were found in the houses of locals, suggesting that hunting pressure may well be high (Kumar and Singh 1999a). In the Mishmi hills, the species is undoubtedly hunted at every opportunity and this has made population density very low and the birds shy (Katti *et al.* 1990). It was apparently known by Mishi tribespeople as "fool-bird" because of the ease with which it is trapped (Baker 1921–1930). Local people in Arunachal Pradesh repeated this claim to Singh (1999), again stating that catching the species is straightforward. Ludlow (ms), in his Tibetan journals, remarked that local tribespeople "find no difficulty in snaring them". Individuals in Tibet did not fly until the last moment when chased by dogs, and in fact one was caught (Bailey 1916a). Hunting and egg-collection were also more recently thought to be problems for the species in China (Zhang Zhengwang *in litt.* 1997). These remarks suggest a long tradition of hunting pressure in the mountains between India and China, and imply that the resultant depletion of the population may be the main threat to the species's survival. Nevertheless, given the altitudes it frequents and the inaccessibility of many portions of its range, even hunting is probably not excessively damaging at present (R. Kaul verbally 1999).

MEASURES TAKEN *Legislation* The species is legally protected in China (a first class nationally protected species), India (Schedule 1; Wildlife Act 1972) and Myanmar (List of protected species 1994, albeit on the strength of the generic term "*Phasianidae*"). It is listed on CITES Appendix I and international trade is thus illegal.

Protected areas In India, the creation of Dibang Valley Wildlife Sanctuary, Arunachal Pradesh, offers some protection. In Tibet, the species occurs in Medog National Nature Reserve and Chayu Nature Reserve (1,014 km²; forests apparently in good condition). In Yunnan, China, it receives protection from Gaoligong Shan National Nature Reserve (1,239 km²; forests apparently in very good condition) and Nu Jiang Nature Reserve (3,754 km²; forests and other habitats in this complex system apparently in very good condition) (protected areas size and condition from MacKinnon *et al.* 1996). The species is listed in error for Baishuijian Nature Reserve, Gansu, and Wolong, Sichuan, by McGowan *et al.* (1999), presumably in mistake for Chinese Monal *Lophophorus lhuysi*.

Research General surveys in mountainous regions of India have revealed its presence and even located a new form of the species in Arunachal Pradesh (Kaul *et al.* 1995a, Kumar and Singh 1998; see Remarks 1). This latter discovery has precipitated further surveys specifically targeting Sclater's Monal, including four months of fieldwork funded by WPA in the 1999–2000 winter, investigating its range and status (*Tragopan* 11 [1999]: 5). Survey work in October 1999 targeted the species in southern Nu Shan (which is near to Nu Jiang Nature Reserve) and Tengchong in western Yunnan, and a further six months of work on the range and ecology of the species at selected sites was planned for 2000 (*Tragopan* 11 [1999]: 5).

Captive breeding Although Delacour (1977) stated that there was no record of this species ever being kept in captivity, Howman (1985) mentioned one captive male and a reported pair in Yangon zoo. In early 1997 three pairs were sent from Yunnan to the Endangered Species Breeding Centre in Beijing for a captive breeding programme (Zhang Zhengwang *in litt.* 1997). The success of this venture is not known; however, if an appropriate initial population is established, there is no reason that the species would not, like the Himalayan Monal, proliferate in captivity.

MEASURES PROPOSED *Protected areas* In existing protected areas that support populations of the species conservation education programmes are needed to reduce the

level of shooting and snaring targeted at this pheasant, and strict prevention of hunting should be sought wherever possible (although this will generally be difficult to enforce because of difficulties of access and terrain). *China* MacKinnon *et al.* (1996) made the following recommendation for the protected areas where this species has been recorded: in Chayu Nature Reserve, revise boundaries to follow ridges; both Gaoligong Shan National Nature Reserve and Nu Jiang Nature Reserve should be managed as part of Nu Jiang–Lancang Jiang “Convergence unit”. The area around the Yalung Zangbo valley has been proposed as a new protected area (with an area of 1,800 km²), linked with the existing Medog reserve, and this new protected area is likely to conserve more of this species’s habitat (Lu Xin *in litt.* 1999). *India* There is still much scope for protected areas in the mountains of Arunachal Pradesh and the presence of Sclater’s Monal could be used as an important focus for the designation of these. A large protected area in Tawang, West Kameng, East Kameng and Lower Subansiri districts could be established in relatively undisturbed high-altitude areas and would provide protection for this form as well as many other east Himalayan birds and mammals, such as takin *Budorcas taxicolor*, musk deer *Moschus chrysogaster* and red panda *Ailurus fulgens* (Singh 1999, Kumar and Singh 1999a). *Myanmar* Carefully sited protected areas in the mountains of northern Myanmar could protect habitat for this species, Blyth’s Tragopan *Tragopan blythii* (see relevant account) and other threatened fauna. These should be established and effectively managed at the earliest opportunity.

Research Very little is known about this species in the wild, so surveys and ecological studies should be carried out at its known distribution and adjacent areas to determine its exact distribution and population size, in order to develop appropriate plans for its conservation. These have been called for in China (Zhang Zhengwang *in litt.* 1997) and are planned to determine the distribution, conservation and taxonomic status of the apparent new subspecies in Arunachal Pradesh (Kumar and Singh 1999a). Surveys are also required at Moilang National Park, West Siang, Arunachal Pradesh (R. Kaul verbally 1999) and any other areas that might prove important for the species. In Myanmar, field surveys should be conducted in the potential range of this species with a view to identifying populations in areas suitable for protection. One option that deserves exploration is the prospective use of tape playback in sites surveyed for the species. It is not clear whether this proves effective with *Lophophorus*, but if it elicits responses from wild birds then it could facilitate the mapping of populations and the estimation of their size and density.

REMARKS (1) A *Lophophorus* taxon recently discovered in western Arunachal Pradesh (Kumar and Singh 1998, 1999a,b,c) differs from both Himalayan Monal *L. impejanus* and Sclater’s Monal in its pure white central tail feathers. It appears to be a western form of Sclater’s Monal but the exact taxonomic relationship between the two forms requires further study (Kumar and Singh 2000). Long before this discovery, Davison (1974) proposed that in areas of overlap with Himalayan Monal, Sclater’s Monal develops more white in the tail through character displacement. He based this on the sharp decrease of width in the white subterminal band of male *sclateri* tails east of 97° E, coinciding with the easternmost localities of *impejanus*. That *impejanus* and *sclateri* overlap in the Mishmi hills (where uppertail-coverts of *sclateri* are also much whiter than in Yunnan), is indicated by locally made fans containing tail feathers of both species (Ali and Ripley 1948). The two species also appear to co-exist in Dibang Valley Wildlife Sanctuary (Kaul *et al.* 1995a). At first site, the fully white tail of the newly discovered westernmost population of Sclater’s Monal, which approaches the main range of the Himalayan Monal, appears to support Davison’s (1974) character displacement idea. Curiously, however, the white-tailed form occurs in an apparent gap in the range of *impejanus* (which has been recorded on either side of the Lower Subansiri and East Kameng districts), and more study is therefore needed to clarify the taxonomic and ecological relationship between the three forms (Kumar and Singh 1999a,b). Both forms of Sclater’s

Monal are thought to approach or overlap around Takasing, Arunachal Pradesh, but although possible intergrades (intermediate tail-patterns) between these forms were recently discovered, no consistent geographical trend or indications of intergradation were found (Kumar and Singh 2000). (2) Several records of this species lie very close to the border between India and China (as mapped in TAW 1999). It is possible that some of these records have been allocated to the wrong country, although in reality many of the areas occupied by this species must straddle their shared border, and also their borders with Myanmar. In particular, the coordinates given by Vaurie (1972) for Nyug La appear to place the locality in Arunachal Pradesh, presumably because they were inaccurately read from a map. (3) The type locality of the species was initially given as “Hills east and south-east of Sadiya” (Jerdon 1870), but this was later adjusted to “Mishmi hills” (Hartert 1894).