

Phulchowki—hill of flowers

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The forests that clad Phulchowki mountain in Nepal are internationally renowned for their fauna and flora but they are unprotected. The subtropical forests on the lower slopes are particularly valuable, being one of the last remnants of such forest left in Nepal and probably the only one still worth protecting. Currently very little of this forest type is included in the country's extensive protected area system. If it is to be saved action is needed soon: marble quarrying and the removal of trees for firewood, foliage and timber are destroying the forests, which are also vital for the protection of water supplies. The authors, whose recent study of Nepal's forest birds reinforced the importance of the mountain, suggest ways in which protection could benefit both the forests and the people.

Phulchowki mountain is situated only 16 km from the country's capital, Kathmandu, in the centre of Nepal's Middle Mountain region, a broad complex of mountains and valleys that runs WNW to ESE across the whole of the country south of the main Himalayan range. Standing at 2715 m above sea-level, it is the highest peak on the rim of the Kathmandu Valley and covers an area of 50 sq km. Its slopes receive exceptionally high rainfall and support luxuriant subtropical and temperate forests, comprising *Schima wallichii*/*Castanopsis indica* near the base, *Quercus lamellosa* and *Q. lanata* higher up and *Q. semecarpifolia* around the summit.

Phulchowki is internationally renowned for the variety of its fauna and flora. Recent research carried out by Nepalese botanists, including Dr Tirtha Bahadur Shrestha of the Royal Nepal Academy, has revealed that several endemic plants grow on the mountain and it is the only Nepalese locality for some other plant species. Ghimre (1984–1985) advocates the complete protection of Phulchowki's forests on the basis of their botanical importance.

A recent International Council for Bird Preservation study on the status and conservation of Nepal's forest birds has highlighted the importance of Phulchowki. The high total of 256 bird

species has been found there; 90 per cent are dependent on forest cover. There are 155 breeding species, and of these 35 are particularly important because it is considered that Nepal holds internationally significant populations. These include a number of babblers, such as the hoary barwing *Actinodura nipalensis* (Inskipp, 1989). The breeding distributions of these latter species are restricted and lie within an area encompassing the Himalaya, north-east India, northern south-east Asia and south-west China (Inskipp and Inskipp, 1986). Among the mountain's breeding birds are 17 considered to be at risk in the country, including six in the endangered category: rufous-throated hill partridge *Arborophila rufogularis*, blue-naped pitta *Pitta nipalensis*, grey-chinned minivet *Pericrocotus solaris*, grey-sided laughing-thrush *Garrulax caerulatus*, blue-winged laughing-thrush *G. squamatus* and cutia *Cutia nipalensis*. The forests are also of considerable importance for wintering birds and passage migrants, which number 51 and 35 species, respectively. There are 23 winter visitors that may have significant breeding populations in Nepal, including a regular flock of the spectacular spot-winged grosbeak *Mycerobas melanozanthos*. Three of these species are nationally threatened: long-billed thrush *Zoothera monticola*, yellow-bellied

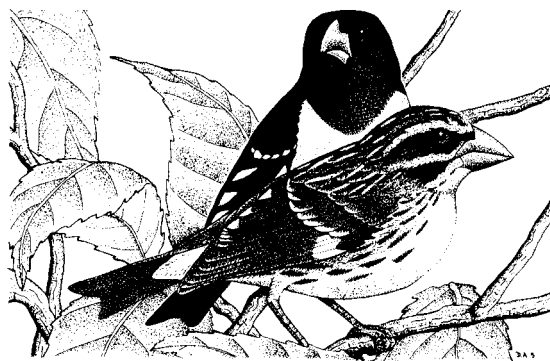
flowerpecker *Dicaeum melanoxanthum* and scarlet finch *Haematospiza sipahi* (Inskipp, 1989).

Phulchowki's forests are rich in other animal groups too. Professor Jochen Martens, who has studied Nepal's Himalayan fauna for 20 years, has long advocated Phulchowki's protection. In 1982 he wrote 'numerous species, especially insects and Arachnida hitherto unknown to science have been discovered there in recent years'.

The subtropical forests are especially valuable for nature conservation. Forests of this type once covered much of central and eastern Nepal, but as they lie within the most densely populated part of the country, virtually all of them have been either converted to agriculture or cut for firewood or animal fodder to supply the vital basic needs of the Nepali people. While Nepal has an extensive protected area system, protection of a *Schima wallichii/Castanopsis indica* forest is the most important and outstanding omission (Inskipp, 1989). Aerial photographs taken by the Land Resources Mapping Project between 1978 and 1979 (Kenting, 1986) clearly showed that Phulchowki's subtropical forest is one of the last remnants of this type left in Nepal and is very likely the only one still worthy of protection.

Phulchowki means 'hill of flowers' in the Nepalese language. The Nepalis have regarded the mountain as the most beautiful part of the Kathmandu Valley for hundreds of years. Last century a former Rana Prime Minister was so enamoured with Phulchowki, that he built a summer resort there and issued an edict that anyone found felling a tree on the mountain would be beheaded on the same tree stump. This personal interest of the then most powerful family in the country ensured complete protection for the area until recent years.

Phulchowki's forests, especially those in the subtropical zone, are now severely endangered and are disappearing at an accelerating rate. Since about 1975 the lower slopes have been extensively quarried for marble. Many workers' houses and a factory have been erected below the quarry on land that was forested only a few years ago.



Spot-winged grosbeak *Mycerobas melanozanthos*; a flock of this bird visits Phulchowki every winter (Dave Showler).

Phulchowki has become the main source of firewood in the Kathmandu Valley and huge quantities are removed daily by local people. In addition large amounts of wood, almost entirely from *Lyonia ovalifolia*, are cut to make charcoal. An aerial photograph taken in 1978 showed that a total of 0.42 sq km was devastated by the latter activity (Khadka *et al.*, 1984–1985). A road runs from the mountain's base to its summit and as it is surfaced for much of its length vehicles can easily remove timber from the upper as well as the lower slopes. In spring 1988 we found evidence of many mature trees having been transported in this way. Enormous amounts of foliage are collected to provide animal fodder, the trees *Castanopsis indica*, *Quercus semecarpifolia* and *Q. lanata* being particularly favoured (Khadka *et al.*, 1984–1985).

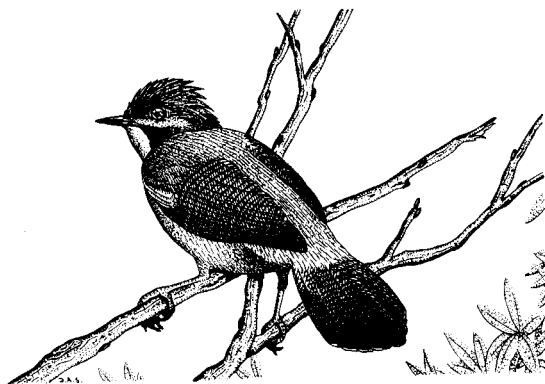
The drastic destruction of tree cover has resulted in a considerable reduction of water in streams flowing from Phulchowki. The Mahedeva temple and two springs at the mountain's base are revered by Hindus and, during a festival held every 12 years, thousands come to bathe in the holy fountains. According to legend these springs sparkle with sweet water even in the driest years, but in May 1983 they stopped flowing for the first time ever known (Dixit, 1986). Streams running from the mountain are now often silt-laden and plaster the fields with a layer of mud when used for irrigation.

Despite these many threats there is still time to save and conserve Phulchowki's forests. While the forests, especially those lower down, are now much depleted, experience from elsewhere in

Nepal has shown that degraded areas, except for those reduced to bare rock in the quarry, can significantly regenerate. Complete protection of other forest areas has resulted in dramatic recoveries and the development of forests well-stocked with native species (Jackson, 1987).

Lying only 40 minutes drive from the busy centre of Kathmandu city, Phulchowki could, with protection, become a valuable and tranquil retreat for both Nepalis and tourists. The views from the top of the mountain are unequalled in the Kathmandu valley. A visit to Phulchowki could be combined with one to the nearby Royal Godavari Botanical Gardens, which are already popular with Nepalis from the city. There is potential for local people to develop cottage industries, such as knitting woollen clothes, and earning much-needed income by selling their produce to tourists visiting Phulchowki. In addition, the close proximity of the city's many schools and Tribhuvan University would enable educational day visits and environmental study camps to be readily organized. Walking up the road to the summit is an easy way of seeing a great variety of Nepal's flora and fauna, many of which are otherwise difficult to observe, and this method results in minimal disturbance. Phulchowki's forests offer good opportunities for research and are already being studied by staff and students of the university's botany and zoology departments. The mountain would also be an excellent location for a small conservation training and information centre, especially as it lies so close to the country's capital. None exists at present in the Kathmandu valley.

However, if Phulchowki's forests and their wildlife are to continue to survive, action must come soon: the quarries must be closed and Phulchowki designated a protected area. At the present rate of destruction, the stage will be reached in the foreseeable future where many species will disappear. Even if the trees were to recover some of the forest inhabitants would take many years to recolonize and others would never do so.



The hoary barwing *Actinodura nipalensis* breeds on Phulchowki; the species has a restricted breeding range and Nepal's population is internationally significant (Dave Showler).

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