

**SURVEY REPORT
ON
FLORAL DIVERSITY OF KHANDAGIRI AND UDAYAGIRI
IN ASSOCIATION WITH
ARCHAEOLOGICAL SURVEY OF INDIA,
BHUBANESWAR CIRCLE, ODISHA**



Memecylon umbellatum



**AMBIKA PRASAD
RESEARCH FOUNDATION**

INTRODUCTION

The twin hills Khandagiri and Udayagiri are located in the capital city of Bhubaneswar, Odisha which are historically, archaeologically as well as religiously famous for a large number of rock-cut caves, inscriptions and iconography. The caves are named as Kumari Parvat in Hatigumpha inscriptions on the hills of Udayagiri and Kumar Parvat in Khandagiri present facing opposite to each other across the road. The thirteen years lithic record of king Kharavela engraved in “Hati-gumpha” is a magnificent specimen of palli records so far found in India (Kumar A et al.2018). There are 18 caves in Udayagiri and 15 caves in Khandagiri. The name Udayagiri means hills of sunrise. The important caves in Udayagiri are Rani gumpha (cave-1), Ganesh gumpha (cave-10), Bagha gumpha (cave-12), Hathi gumpha (cave-14). The Ganesh gumpha and Hathi gumpha were best known for the sculptures of Ganesha and art treasures that are inscribed on the wall of caves (Leoshko J 2010). This Ganesh gumpha is one of the rare cave with multiple number of dwellings and terraces present in Udayagiri hill. It is the best known for the sculpture of Ganesha that is inscribed near wall of the cave. The Rani Gumpha or the Queen’s cave is the largest, most majestic cave here. It is a two storied monastery supported by many columns and terraces. The cave contains beautiful sculptures of dancing women, royal entourage and musical instruments. Other important caves in these hills are the Alkapuri Gumpha, a double storied cave with columns containing sculptures of elephants and heavenly creature apart from ornamentals and treasures. The Bagha gumpha looks like a tiger’s open mouth and the inscriptions are showing the cave of town judge.

The most important caves in Khandagiri are Tatowa gumpha (cave-1 and 2) and Ananta gumpha (cave-3). Both the Tatowa Gumpha present on Khandagiri hill have parrot carvings over the entrance arches. These caves also bear some inscriptions of the time and the use of natural color pigments is evident. The Ananta Gumpha is a very interesting cave in this complex and in this cave, there are ancient Jain motifs such as swastikas and serpents. The Navamuni Gumpha carries sculptures depicting 9 Jain Tirthankaras or seer-sages. This cave depicts a number of DigambarJains at prayer. The Banabhuji Gumpha came to be named after two sculptures with 12 arms each. This cave has a belief depicting a number of Hindu deities.

Besides being a site of natural beauty, this site is also a hub of biodiversity exhibiting a special type of dry evergreen forest vegetation characteristic of sand stone hills, very uncommon elsewhere. The hill range rises abruptly and stretches in a long curve, from north-east to south-

east. From the base one can see three distinct peaks called Udayagiri, Khandagiri and Nilagiri. A narrow road leading to Chandaka Reserve Forest separates Khandagiri on the west and Udayagiri on the east. The crest of Khandagiri on which is perched a Jain temple which is 37.5 meters in height from the road. The highest crest of Udayagiri is 33.54 meters and of Nilagiri is still less.

SURVEY WORK

Ambika Prasad Research Foundation (APRF) has started its survey on the floral diversity of Khandagiri and Udayagiri from 10th August 2020 for about one month after getting permission. In the year 2019, we have done some awareness program on Medicinal Plants available in Khandagiri and Udayagiri. As these caves and mountains are well known for Jainism community as well as minor Hindu religion, it is also surrounded with a large floral diversity behind the monuments. This is a semi evergreen forest comprising of many unique species along with local native plants. Moreover, ten field trips were attempted to study the research area more profusely (with proper precautions and social distancing in this pandemic COVID19 situation).

During the survey, we found wide variety of plant species consisting of herbs, shrubs, trees, climbers and so on in their flowering and fruiting condition that are possessing different medicinal values. Some of them are *Abrus precatorious*, *Adiantum philippense*, *Acalypha indica*, *Acacia leucophloea*, *Acacia auriculiformis*, *Alternanthera sessilis*, *Bombax ceiba*, *Barleria strigosa*, *Breynia retusa*, *Boerhavia diffusa*, *Bauhinia variegata*, *Bauhinia acuminata*, *Desmodium triflorum*, *Dillenia indica*, *Dendrophthoe falcata*, *Carissa spinarum*, *Capparis brevispina*, *Calophyllum inophyllum*, *Calotropis gigantea*, *Clitoria ternatea*, *Cleome rutidosperma*, *Fioria vitifolia*, *Ficus benghalensis*, *Erycibe paniculata*, *Eranthemum capense*, *Ficus religiosa*, *Helicteres isora*, *Holarrhena pubescens*, *Heliotropium indicum*, *Hibiscus rosa-sinensis*, *Ipomoea hederifolia*, *Hybanthus enneaspermus*, *Kyllinga brevifolia*, *Jatropha gossypifolia*, *Ixora coccinea*, *Lannea coromandelica*, *Mimusops elengi*, *Mimosa pudica*, *Ochna obtusata*, *Naringi crenulata*, *Pavetta indica*, *Caesalpinia pulcherrima*, *Rauvolfia tetraphylla*, *Combretum indicum*, *Pteris vittata*, *Simarouba glauca*, *Sida cordifolia*, etc.

The plant photographs were taken for easy identification and will be documented for future use.

The survey was carried out successfully guided by Dr. Sanjeet Kumar, Research interns Mohini Kanti Das, Malay prithwiraj Sahoo and other students with the cooperation of staff members of Khandagiri and Udayagiri, Archaeological Survey of India, Bhubaneswar Circle, Odisha.

Dr. Sanjeet Kumar guided the students in identification of plant species as well as key characteristics of plant family. Students acquire knowledge about the floral diversity which will be proved beneficial in biodiversity conservation for upcoming period.

TABLE 1: LIST OF FLORAL DIVERSITY OF KHANDAGIRI AND UDAYAGIRI

BOTANICAL NAME	FAMILY	LOCAL NAME	COLLECTION SITE
<i>Abrus precatorius</i>	Fabaceae	Kaincho	Udayagiri
<i>Acacia auriculiformis</i>	Mimosaceae	Acacia	Udayagiri
<i>Acacia catechu</i>	Fabaceae	Khaira	Udayagiri
<i>Acacia leucophloea</i>	Mimosaceae	Gohira	Udayagiri
<i>Acalypha indica</i>	Euphorbiaceae	Indramaricha	Udayagiri
<i>Adiantum philippense</i>	Adiantaceae	Nil	Udayagiri
<i>Alternanthera sessilis</i>	Amaranthaceae	Madaranga saga	Udayagiri
<i>Alphonsea madraspatana</i>	Annonaceae	Ghanti	Udayagiri
<i>Alysicarpus vaginalis</i>	Fabaceae	Nil	Udayagiri
<i>Ammannia baccifera</i>	Lythraceae	Ramdani	Udayagiri
<i>Anacardium occidentale</i>	Anacardiaceae	Kaju	Udayagiri
<i>Anisomeles indica</i>	Lamiaceae	Landabaguli	Udayagiri
<i>Antidesma ghaesembilla</i>	Euphorbiaceae	Katha marmuri	Udayagiri
<i>Aporosa octandra</i>	Euphorbiaceae	Nil	Udayagiri
<i>Argemone mexicana</i>	Papaveraceae	Kanta agara	Khandagiri
<i>Aristolochia indica</i>	Aristolochiaceae	Panairi, oyidi	Udayagiri
<i>Atylosia scarobeoides</i>	Fabaceae	Bankoltha	Udayagiri
<i>Azadirachta indica</i>	Meliaceae	Nimba	Udayagiri
<i>Barleria strigosa</i>	Acanthaceae	Banmalli	Udayagiri
<i>Bauhinia acuminata</i>	Caesalpiniaceae	Sweta kanchana	Udayagiri
<i>Bauhinia variegata</i>	Fabaceae	Kanchan	Khandagiri
<i>Boerhavia diffusa</i>	Nyctaginaceae	Puruni	Udayagiri
<i>Bombax ceiba</i>	Bombacaceae	Simili	Khandagiri
<i>Breynia retusa</i>	Euphorbiaceae	Jajanga	Udayagiri
<i>Caesalpinia pulcherrima</i>	Caesalpiniaceae	Radha Chuda	Udayagiri
<i>Calophyllum inophyllum</i>	Clusiaceae	Ponnang	Khandagiri