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The talking trees...

Dr. Satish Pande

As forests continue to shrink and habitats get modified, the number of bird species included in the Red Data Book continues to grow. There is no sign of decrease. More birds from India also feature in the new list showing that they are also not lagging behind in the death race. This simply means that various reasons that push the birds towards their extinction continue to rise on a global as well as local scale. This is an alarming situation. Human unconcern towards environment is the major driving factor that forces birds and all other animals and plants towards facing higher threat perceptions of various proportions.

Multi-level education of the public, implementing agencies, policy makers and politicians is no doubt the ultimate answer to this problem, but it takes a long time to reveal the results. In the meanwhile, strict adherence to existing laws and their effective implementation appears to be the only hope. The existing laws are quite effective if seriously followed. We have already identified several lacunae in the existing legal framework, and this is a dynamic process because life and society both continue to evolve. These lacunae should no doubt also be addressed in the near future on an urgent basis. However, in the meanwhile, instead of strictly implementing the existing laws, we often indulge in making new ones, just to shrug the responsibility. We should not forget that the existing laws related to pollution, environment, forests and wild life have sharp teeth. Over sharpening the legal instruments may not be necessary. Our armamentarium is already overflowing, and we may also have some wrong ammunition in our armamentarium. An honest contemplation is now necessary. Human race appears to have lost site of the final target of the well being of our entire Earth, and our narrow thinking seems to have focused only on the well being of humans, conveniently forgetting that we are inevitably linked with the diverse environmental parameters that shall ultimately dictate the quality and extent of human existence on our beautiful planet.

In the meanwhile, state of the art scientific research is throwing light on the hidden life of trees. New insights are augmenting our understanding of the plants and we now know that plants, whom we take for granted and consider dumb and deaf and cut them at will are also social interacting members of a vibrant and sensitive communicating society. They can communicate, send signals, alert each other when sensing danger, assist each other, nurture their families and have a wide underground network of inter-connecting mycelium or 'mycorrhizae', that plants utilize not less effectively than our internet communication network. The only difference is that this hidden underground 'wood wide web' is much-much more ancient than ours, and possibly more effective, because plants not only communicate using this network but can also support one another, particularly their less privileged members, in periods of draught.

Today we have started understanding that forests are super-organisms connected by an underground fungal network. A colony of honey fungus in Switzerland was seen to cover an area of 120 acres and is estimated to be about 1000 years old, and these fungi connect with one another and with the roots of forest trees making the forest similar to one large living unit exchanging nitrogen, phosphorus, water and other essential food ingredients. Forest trees support each other and thrive and live through periods of stressful conditions.

Let us respect and understand the world of trees and support them, such that the forests shall live their normal long life spans and support the rich biodiversity that depends on them. We should never forget that humans also need forests for their survival. If time permits one should read an eye opening book 'The Hidden Life of Trees' by a German forester Peter Wohlleben, and I am sure that our perspective towards forestry will drastically change for the better.

Characteristics of Vocal Signals of the Sykes's Lark *Galerida deva*

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Keywords

Sykes's Lark, Vocal signals, song pattern.

Abstract

The Sykes's Lark (*Galerida deva*) is endemic to India and is found in Central India and have a melodious distinctive song (Grimmett et al. 1998). The focus of our research was to document the spectrum and analyze the characteristics of vocalizations and their possible functions. The recordings were done at Saswad, Pune between June and October 2015. Behavior associated with these calls/songs was noted. The frequency, call duration and frequency at maximum amplitude of each call/song were studied and song patterns were identified from the spectrogram of each recording (Catchpole & Slater, 1995). The minimum frequency varied from 1.5-2.5 kHz, the maximum frequency varied from 4.5-6.5 kHz and the frequency at maximum amplitude varied from 2-4 kHz. Two types of behaviors associated with singing and two types of behaviors associated with

calling were observed. 162 unique phrases were found in the recordings made. The Sykes's Lark emits a wide variety of phrases, is a prolific singer and is also mimics calls of birds in its surroundings.

Introduction

In many bird species, calls or songs produced by individuals and the contexts in which they are produced are usually the focal point of study (Padget, 2010). Birds use a wide variety of vocal signals with specific biological functions which are not yet fully understood (Kumar, 2000). Songs and calls are not always easily distinguished (Borowiec and Lontkowski 2000, Kumar 2003). Vocalizations uttered in a single articulation and generally made up of single syllable (a syllable is a continuous sound, preceded and followed by a silent gap) are known as calls, while a typical song may include a continuous series of phrases (Catchpole and Slater 1995, Geoff 1996, Bhatt et al.2000). Calls are used in all seasons and play an important roles in the socio-biology of birds (Geoff 1996).Generally, male birds use songs for territorial advertisement and mate attraction (Bhatt et al. 2000). Sometimes, birds use songs for other purposes, such as to coordinate nest exchanges between mates (Smith 1988), inform females that there is no immediate threat of predation (Johnson and Kermott 1991), and distract potential predators (Ritchison 1991). In some bird species, females also sing (Ritchison 1983) such as in the Superb Fairy-Wren *Malurus cyaneus* (Cooney and Cockburn 1995) and Oriental Magpie-Robin *Copsychus saularis* (Kumar and Bhatt 2001). In many species song repertoire is organized around a limited number of phrases or song types, such as in the European Redwing *Turdus iliacus* (Bjerke & Bjerke 1981), Splendid Sunbird *Necterina coccinigastra* (Grimes 1974), Ovenbird *Seiurus aurocapillus* (Falls 1978) and White-crowned Sparrow *Zonotrichia leucophrys* (Baptista 1977) which have a simple, monotonous song. In others, like Mockingbird *Mimus polyglottos* (Howard 1974) and Sedge Warbler *Acrocephalus schoenobaenus* (Kroodsma & Parker 1977; Catchpole 1976), the songs are composed of a large number of dissimilar structured syllables with many combinations (Catchpole & Slater, 1995).

The Sykes's Lark (*Galerida deva*) is a passerine bird of the family Alaudidae (Grimmett et al. 1998). It is an Indian endemic mainly found in Central India (Grimmett et al. 1998). Song is a pleasant, burbling varied mix of churring, clear notes and effortless mimicry that may include common Iora and Red-wattled Lapwing among many other species (Rasmussen 2005, Grimmet 1998, Ali 1979). Has fewer prolonged whistles, more repetitions, more variable tempo and coarser, more grating, less sweet quality than the other larks (Rasmussen and Anderton, 2005). Calls are high pitched, sharp, whistled down slurred chirps with fewer syllables. In flight it gives distinctive, deep throated, guttural, buzzy down slurred notes. Song is delivered while soaring, hovering and in wandering flight (Rasmussen, Anderton, 2005, Ali, Ripley, 1992).

Apart from a short description of calls of Sykes's Lark, no detailed description is reported like frequency, repertoire, song pattern, etc. This study will give additional information on the song pattern and behavioral attributes like mimicry and repertoire. Vocal signals are important for studying bird behavior both at individual as well as social level and to gain knowledge about various aspects like song learning and neurobiology in birds, development in natural history and understanding their role in the course of evolution. Hence, this study can be a baseline for further studies that may include more about the behavioral ethology, socio-biology and adaptations of calls of a tropical bird, to diverse habitats.

Aims and objectives

The aim of this study is to document and characterize different vocal signals of the Sykes's Lark and correlate them with its behavior. The objectives of the study include: Recording and analyzing acoustic signals of the Sykes's Lark particularly the physical attributes of calls and songs e.g. frequency, call duration, etc; analyzing song pattern and variation in the phrases among the individuals; recording the basic phrases from the analysis of sonograms and analyzing calls of Sykes's Lark based on behavioral observations.

Materials and Methods

Study area: The study area was the outskirts of Saswad city, Purandar taluka, Pune district, Maharashtra, India (18°21'30.14"N, 74° 3'30.28"E). Forest type-Thorn Scrubland 6A which is dominated by grasses of the genus *Aristida, Dichanthium* and, *Hetropogon* (Champion and Seth, 1968).

Methodology

Recording equipment: Recording of calls in the field

was done using a Zoom H2N recorder. The H2N can record audio as uncompressed WAV files that contain all the recorded signals without any data deletion. Some recordings were done as a pilot study in the month of June 2015. These were done in Bopdev Ghat, near Pune. More extensive recordings were done from July to October 2015 during 6 visits to Saswad and 3 visits to Bopdev Ghat. Recording was done at the same time (morning from 7-10 am) during each visit. The bird was first identified visually. The recorder was taken as close to the individual as was possible without disturbing it (usually 2.5 m away). When hovering behaviour was observed, recording was done standing directly beneath the bird. Vocalisation was recorded by pointing the recorder at the individual to get a clear recording. Wind was a major problem to get clear recordings. But it could not be totally avoided so recordings were done when there was a minimum breeze. Recordings were later cleaned to the extent possible without harming the signal. Behavior associated with the vocalizations was recorded in the field. Calls were recorded for multiple individuals. A total of 72 recordings were obtained. Each recording was done some distance away from the previous one so as to avoid recording the same individual.

Call Analysis Software: Analysis of calls was done on two softwares- Audacity and RAVEN. Audacity enables one to filter recordings (noise removal, high pass filtering, amplification, cropping, etc). The edited recordings were used for further analysis by of spectrograms and waveforms and to obtain measurements such as minimum and maximum frequency, start time, end time, power, amplitude, etc.

Recordings were filtered to remove noise and enhance the sound of the call/song of the lark in the software 'Audacity'. This software was used sparingly and ample margin was kept when filtering so as to avoid modification of the recordings. Some recordings were excluded from further analysis due to poor quality. The cleaned recordings were then analyzed on the software 'RAVEN'. Each recording had multiple calls/ songs, which were analysed separately. Spectrograms and waveforms were displayed and the parameters; minimum frequency, maximum frequency, FMA (Frequency at max amplitude) and call duration were noted down in the datasheets prepared in Microsoft excel. Behaviour associated with the calls was also noted. Song patterns were identified by studying the spectrograms of each recording (Catchpole & Slater, 1995). Each phrase from the individual call/song was identified and coded with a letter. Each call/song had one to multiple phrases which were noted in the data sheet alongside the physical measurements of the calls. (Fig. 2A to 2E) These letter codes were the song pattern of the call/song of that individual. Because of the great variety of form and structure in songs, individual researchers often use and define their own terms, which may be slightly different from each other (Catchpole and Slater, 1995). For this study, structural units of calls and songs were labeled based on intervals in the call between two phrases.

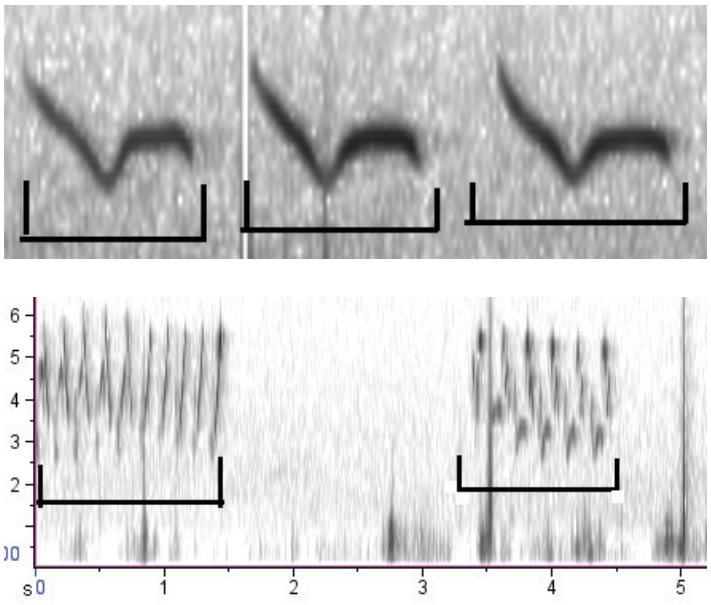

Fig 1: Spectrogram of different songs of Sykes's Lark showing divisions of phrases and elements. Spectrograms are plots of frequency against time with the trace being dark where there is energy at that particular point giving a visual representation of the pattern of sound.

Results

Physical Characteristics

For songs, minimum frequency varied from 1.5-3.1 kHz, maximum frequency varied from 5.7-7.1 kHz and frequency at maximum amplitude varied from 1.9-4.8 kHz. For calls, minimum frequency varied from 1.2-3.5 kHz, maximum frequency varied from 4.8-6.7 kHz and frequency at maximum amplitude varied from 2.4-5.2 kHz.

Table 1: Physical characteristics of songs

No. of recordings	F min (mean) kHz	F max (mean) kHz	FMA (mean) kHz	Call duration (mean) sec
5	2.6	6.1	4.4	2.28
6	2.4	5.7	4.2	3.34
10	1.8	6.8	3.1	5.54
11	2.4	6.8	4.2	0.882
39	3.1	6.2	4.4	0.61
44	2.6	6.3	4.7	0.742
50	2.3	6.4	4.8	1.55
51	2.2	6.5	3	9.52
52	2.5	6.5	4.8	1.06
54	2.4	6.2	4.2	0.944
55	1.7	6.8	1.9	23.091
63	1.9	6.6	3.8	3.371
64	1.6	6.3	3.7	48.63
67	1.5	7.1	4.0	16.87
68	2.0	6.4	3.5	0.755
69	2	5.7	3.6	1.622

Table 2: Physical characteristics of calls

No. of recordings	F min (mean) kHz	F max (mean) kHz	FMA (mean) kHz	Call duration (mean) sec
7	2.1	6.5	3.1	0.79
12	2.7	4.9	3.5	0.42
33	3.5	6.7	4.6	3.6
37	3.3	6.2	4.6	0.69
40	1.4	4.8	3	0.579
42	1.9	6.4	4	1.18
43	2.8	6.6	4.3	0.33
46	2.2	6.4	3.5	2.545
47	1.8	6.3	2.4	0.83
48	2.5	6.8	3.6	1.32
61	1.4	5.9	2.9	0.928
62	1.6	5.3	2.8	0.651
65	3.9	6.9	5.2	0.5075
66	1.2	5.9	3.4	0.5
70	1.6	5.9	2.5	2.68
71	2.3	6.2	3.8	0.908
72	1.8	6.6	2.4	11.65

Song Pattern: The unique number of phrases observed from the data collected was 162. Phrases repeated across individuals were very less.

Behavioral Observations: Four main types of behaviors were observed during the recordings. Two behaviors were associated with singing and two were associated with calls.

Songs: Some birds were observed to be hovering in the air at 10-20 ft height while singing. These songs were observed to be sung for a long time with very short intervals. The longest observed song was for almost 20 minutes. Parts of the songs were observed to be mimicry of other bird songs. These could possibly be advertising songs for females.

Individual standing on a prominent perch like a stone was observed to be singing. There were many other individuals present in the surrounding area which were reciprocating these calls. These could be communication songs or advertising songs as it individuals in the surrounding area were responding in a similar manner to these songs.

Calls: Birds were observed to be calling in between feeding. These were very short calls (0.5-0.9 sec) and usually were composed of only one or two phrases. These could be inter-feeding calls.

Calls were observed when the birds were flying short distances. These were short (0.5-1 sec) and simple, composed of only one or at the most two phrases. These could be communication calls.

Mimicry: The birds were seen to mimic calls of other birds present in the habitat namely Yellow-wattled Lapwing (*Vanellus malabaricus*) and Ashy Prinia (*Prinia socialis*). Mimicry was generally observed when the bird was hovering in the air and singing.

Discussion

The Sykes's lark is a prolific singer and incorporates several phrases in its songs. It also incorporates mimicry of birds present in the surrounding area. It uses a wide variety of trills, down slurred and up slurred notes.

Physical Characteristics of Vocalizations:

For songs, minimum frequency varied from 1.5-3.1 kHz, maximum frequency varied from 5.7-7.1 kHz and frequency at maximum amplitude varied from 1.9-4.8 kHz. For calls, minimum frequency varied from 1.2-3.5 kHz, maximum frequency varied from 4.8-6.7 kHz and frequency at maximum amplitude varied from 2.4-5.2

kHz. Frequency of songs of Sykes's Lark is 2-6 kHz and for calls it is 2-4 kHz (Rasmussen & Anderton, 2005). Hence, some difference was observed in the range for calls and songs, in this study.

Song Pattern:

Each call or song is basically made up of phrases. Phrases are made of multiple elements, which may be similar or may be very different (Catchpole & Slater 2008). The Sykes's Lark uses a wide variety of phrases in their calls and songs. The total number of phrases observed in the study was 162. Some phrases were repeated across the individuals but many phrases are different in different individuals.

Possible Functions of Vocalizations:

Individuals were seen hovering in the air and singing for 25-30 minutes, possibly for advertising to the females. Individuals also sung standing on a perch like a stone or a post, possibly as communication songs or advertising songs as other individuals in surrounding area were responding in a similar manner to these songs. Individuals were seen emitting short calls as inter-feeding calls. Individuals were also seen to be calling when flying short distances (7-8 ft away) possibly as communication calls.

Mimicry: Mimicry of the calls of commonly seen in the study area, the Yellow-wattled Lapwing and Ashy Prinia was observed. It is possible that the Sykes's Larks were mimicking other bird species, but these were not identified during the study. The Sykes's Lark song has mimicry reported for species like the Common Iora and Red-wattled Lapwing among many other species (Rasmussen 2005, Grimmet 1998, Ali 1999).

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Fig 2A: Various phrases of the Sykes's Lark from our study

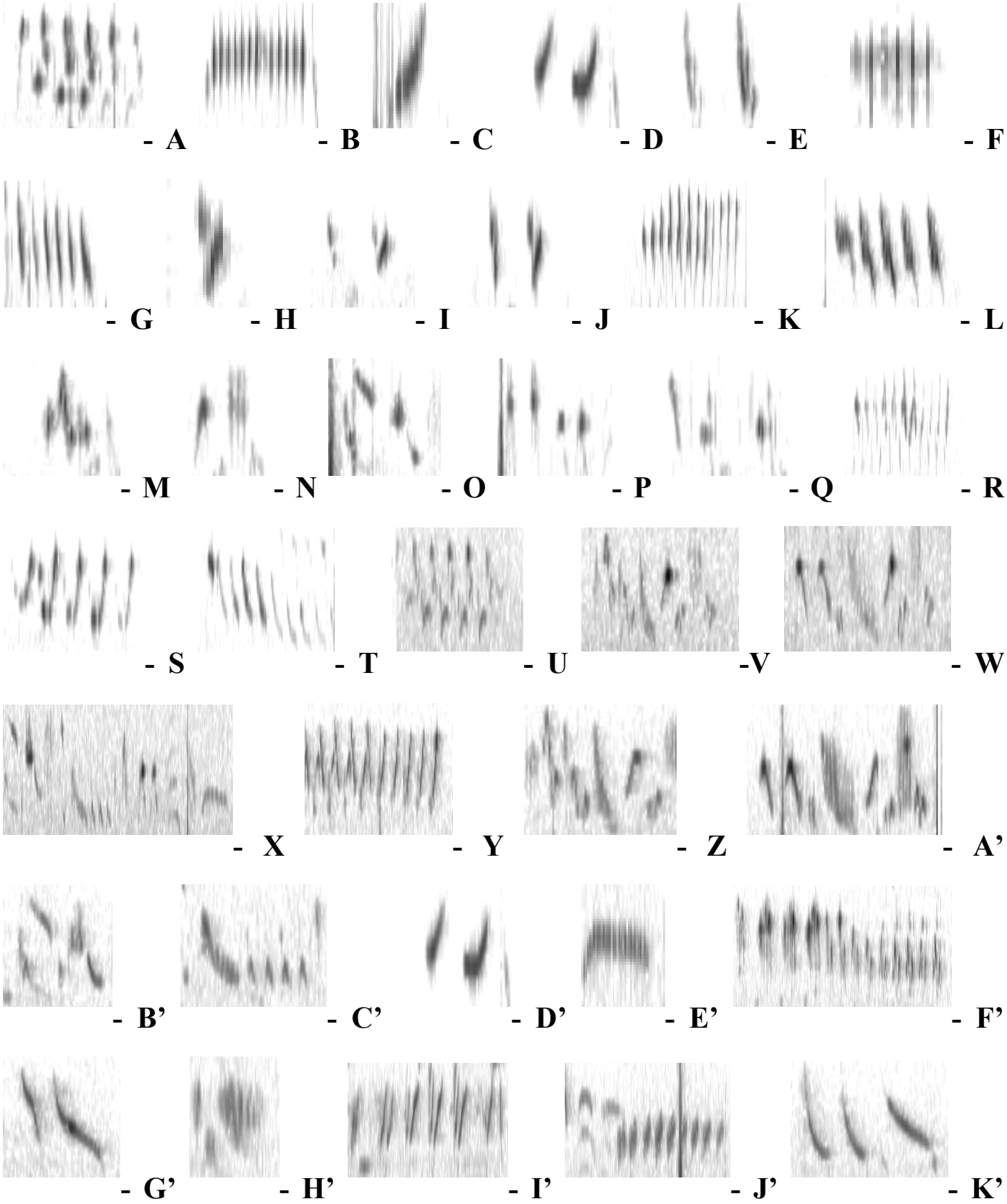


Fig 2B: Various phrases of the Sykes's Lark from our study

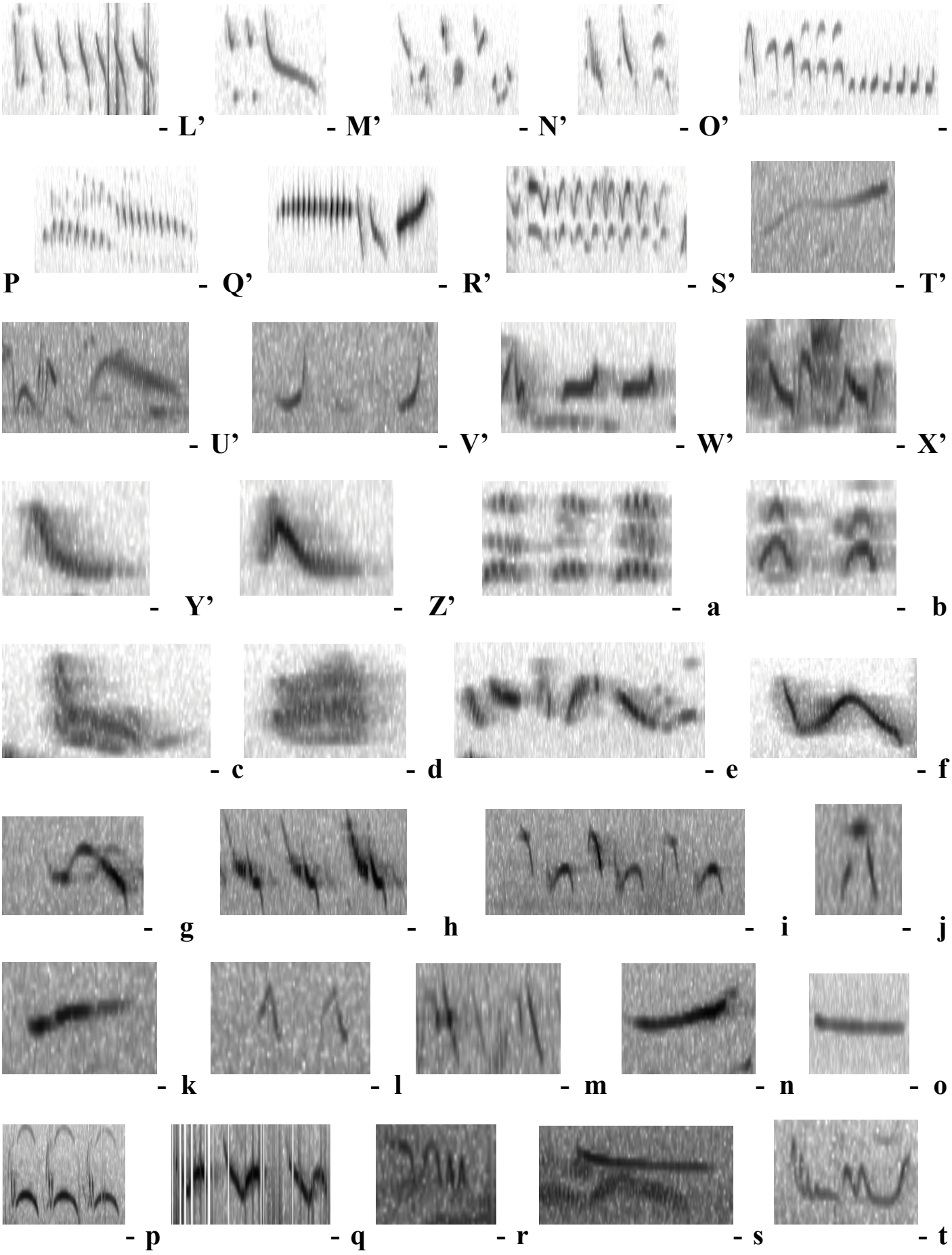


Fig 2C: Various phrases of the Sykes's Lark from our study

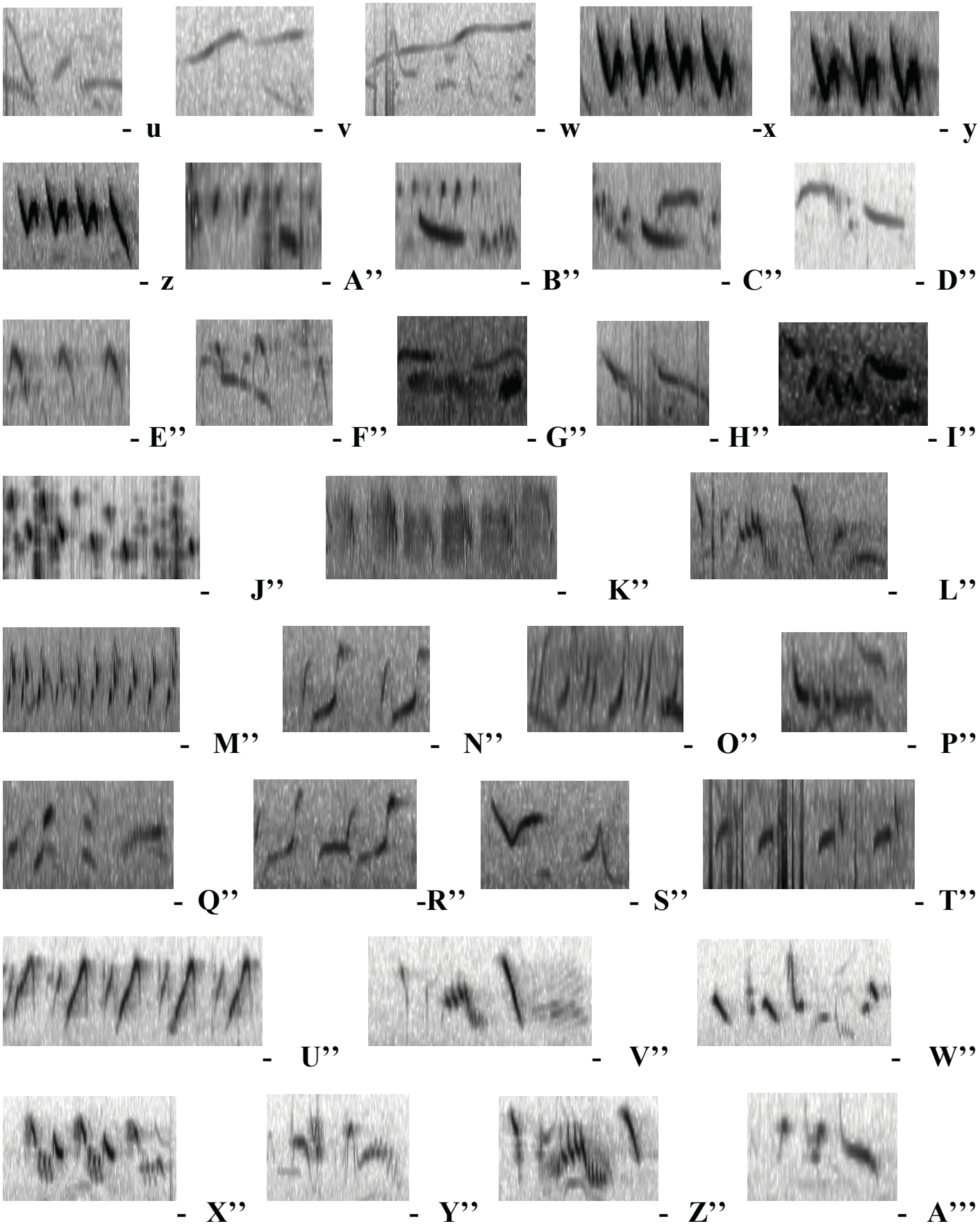


Fig 2D: Various phrases of the Sykes's Lark from our study

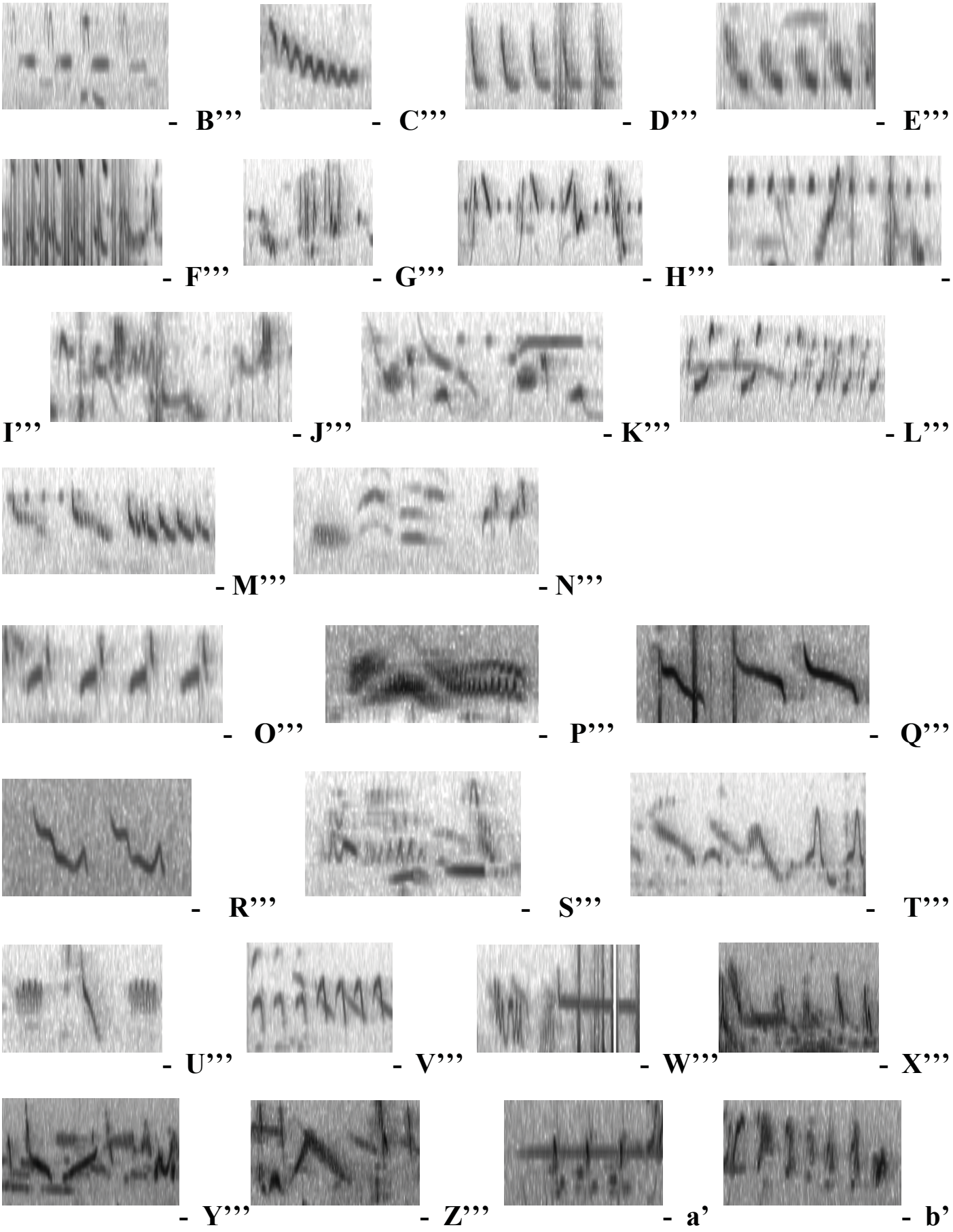
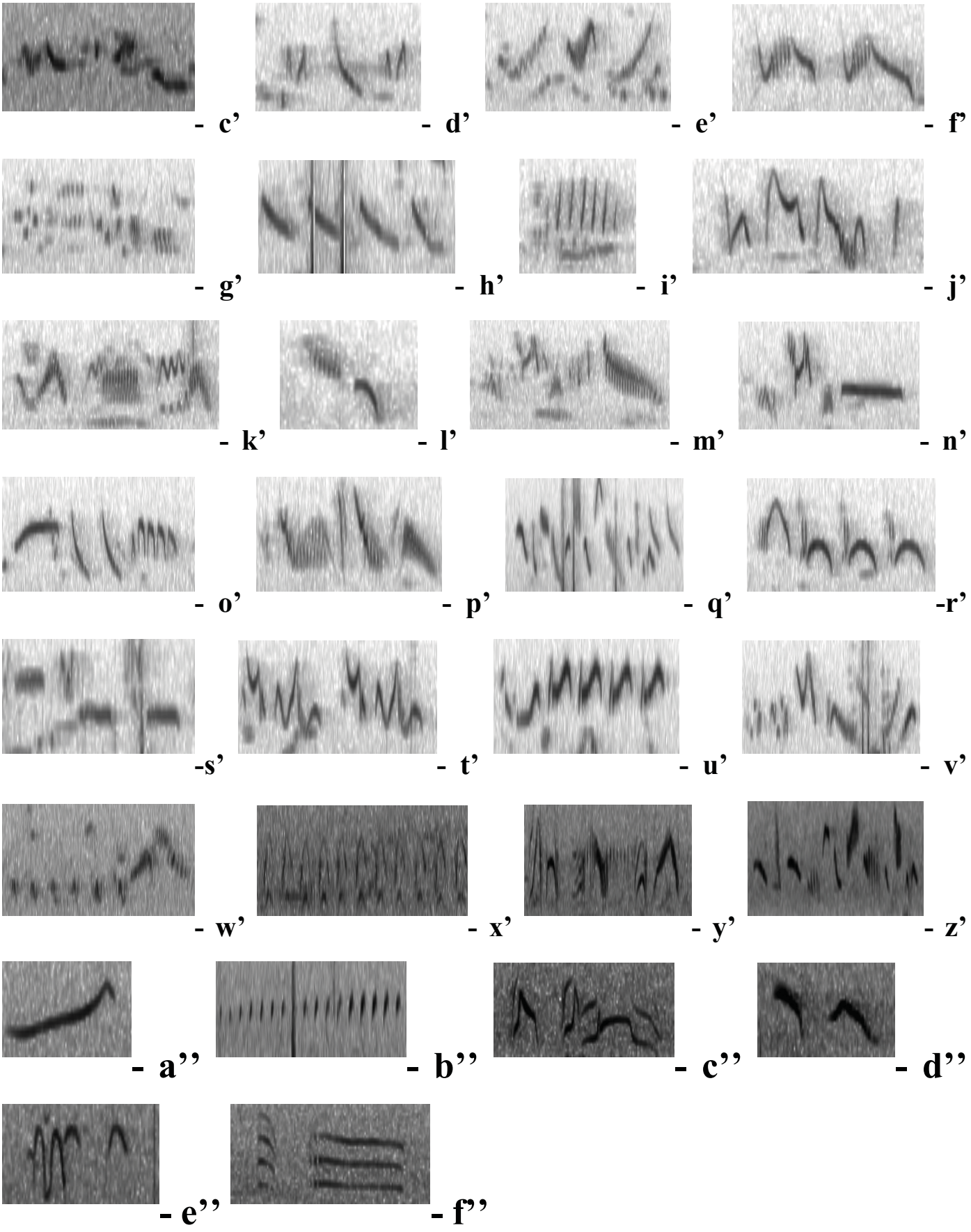


Fig 2E: Various phrases of the Sykes's Lark from our study



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Sighting records of Sand Martin *Riparia riparia*, Eurasian Crag Martin *Hirundo rupestris* and Northern House Martin *Delichon urbica* from Vidarbha region of Maharashtra, India.

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Martins are passerines (Family Hirundinidae) adapted to aerial feeding. They have pointed and long wings, compact bodies, short bill and very short legs. There are nine species of Martins recorded in Indian subcontinent, out of whiche Plain Marin (*Riparia paludicola*) and Dusky Crag Martin (*Ptyonoprogene concolor*) are commonly found in Vidarbha and the other species are vagrant and passage migrant to India (Grimmett *et.al.* 2007). On 9th January 2016 at 0810 hrs while birding at Popatkhed dam in Akot tehsil of Akola district of Maharashtra, we recorded Sand Martin, Eurasian Crag Martin and Northern House Martin. Popatkhed dam is located at 21.204'N and 77.084' E. It is an earthen dam at the foothills of Satpuda ranges near Melghat Tiger Reserve. This is the first sighting of these three species in Akola District of Maharashtra.

The Sand Martin (*Riparia riparia*) or Bank Swallow is a small, slender bird with long wings, a slightly notched tail and a distinctive dark band across the

Sand Martin

Eurasian Crag Martin

Northern House Martin

breast (delHoyo *et. al*. 2004; Garrison 1999; Peterson 1990; Ridgely 1989). The male and female sand martins are similar in appearance (delHoyo *et. al.* 2004; Garrison 1999) According to (Ali 2002) Sand Martin is a winter visitor to India. There are isolated records from Maharashtra and Gujarat (Grimmett *et. al*. 2007). The Sand Martin is one of the most widely distributed species in the world (Garrison 1999), breeding across North America, Europe and Asia, as far south as Mexico, North Africa and southern Asia. Most Sand Martin populations migrate south in winter, with birds from North America travelling to Central America, South America and the West Indies, and those from Europe and Asia travelling to Africa, Arabia and southern Asia (delHoyo *et. al*. 2004; Garrison 1999). Melghat Tiger Reserve is situated in Satpuda mountain range and Sand Martin appear to be passage migrants or a vagrants to this area.

Eurasian Crag Martin (*Hirundo rupestris*) breeds in Pakistan hills and Himalayas (Grimmett *et. al.* 2007). Eurasian Crag Martin has a dusky brown crown and upperparts, dark brown wings and a dark, square-shaped tail with white spots on underside of the feathers. The chin and throat are pale with dark speckles, becoming pale buff-brown on the breast and brown-grey on the belly (delHoyo 2004). The Eurasian Crag Martin has a wide breeding range throughout southern Europe, northwest Africa, the Arabian Peninsula and southwest Asia, southern Russia to Siberia, north Mongolia, the Himalayas, and China. It winters in the Mediterranean, North Africa, the Middle East, India and southern China (delHoyo 2004). It is winter visitor in Western Ghats. Most probably Eurasian Crag Martins migrate to India through Pakistan hills to Himalayan hills towards Gujarat, Western Ghats and Melghat Tiger reserve. Martin identification is not easy because of their small size and scanty numbers in our region hence the report of this species is important.

Northern House Martin (*Delichon urbica*) is a summer visitor to west Himalayas (Grimmett *et. al*. 2007). It is small black and white bird with short forked tail. It is glossy blue back above with white rump and pure white below (Ali 2002). The preferred habitat of the Common House Martin is open country with low vegetation, such as pasture, meadows and farmland, and preferably near water, although it is also found in mountains up to at least 2,200 meters altitude (David 1998). The Northern House Martin is a migrant which moves on a broad-front. It breeds across temperate Eurasia east to central Mongolia and the Yenisei River, and in Morocco, Tunisia and northern Algeria and migrates on a broad front to winter in sub-Saharan Africa (David 1998). It migrates to India from Himalayan foothills through central India, Satpuda hills with suitable cliffs and gorge to southern India close to terraced cultivated part and Valleys. As the study area is situated in Satpuda hills they provide a stopover for migratory birds.

This is the first sighting of Sand Martin, Eurasian Crag Martin and Northern House Martin in Akola District of Maharashtra. These birds always get overlooked by birders due to their small size and the altitude at which they fly. Sighting reports of these species are important to predict their migration routes.

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First Report of Spotted Creeper *Salpornis spilonotus* in Satpuda Ranges of Jalgaon District

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Vadhoda forest range of Satpuda, lying in north-eastern part of Jalgaon district has been recently upgraded as Muktai-Bhavani Tiger Conservation Reserve. This area is a good habitat for the apex carnivore like the Bengal Tiger (*Panthera tigris*) testifying to the significant richness of this tropical deciduous forest dominated by *Acacia catechu, Acacia chundra*, *Boswellia serrata* and *Hardwickia binata*. The avian diversity of the reserve is also rich. On 02 May 2015 at 0647 PM we sighted the Spotted Creeper *Salpornis spilonotus* on an *Acacia catechu* tree at Charthana forest of Vadhoda range. The GPS coordinates of the sighting were $21^0$3'49" N, 76^0 14'31" E.

On the same day we also saw the Oriental Honey Buzzard *Pernis ptilorhynchus* perched on an *Albizia* tree. The Spotted Creeper (*Salpornis spilonotus*) (*Vruksha Sarpi* in Marathi) is known to breed in the Indian Subcontinent, in Central India (Grimmett et al, 2011). It has short and broad, slightly rounded tail with brown upperparts, including wings, is boldly spotted and barred with white and the grayish-white tail is banded with dark brown, while the under parts are washed with orange- buff and spotted with brown. It has a prominent whitish supercilium and a dark eye- stripe. (Grimmett et al, 2011, Ali 2002). It prefers trees with fissured bark (*Acacia*) and forages like a nuthatch and consumes insects and spiders. This species is not reported earlier in any of the checklist of birds of Jalgaon district (Patil, 2015) and this is a new record to the avi-fauna of Jalgaon district of Maharashtra State.

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Scope for improvement: Bee keeping – as a tool for Eco-restoration

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forest dweller stakeholder rights; bee flora enhancement; exotic melliferous eucalyptus introduction

Abstract

India has long tradition of obtaining honey from wild bees but in the context of landscape level forest resource planning and management, it has not received due recognition; honey collection is treated as a minor forest product. With a paradigm shift in forest resource ownership towards forest dwellers, who by default practice eco friendly cultivation on marginal land holdings that have sub-optimal production potentials, apiculture practices on such lands are expected to provide not only boost in agri / horti production but also provide an additional income generation activity. As Israel is reported to have introduced exotic eucalypts from Australia to augment bee flora for optimizing honey bee products, a study tour was made for its appraisal and relevance in our context. Field visits and dialogue with representative major key stake holders /facilitators / researchers etc, confirmed the success. Similar concerted effort involving local stake holders, for multi-locations pilot scale, species trials with indigenous species as control are recommended.

Introduction

Back ground - Even the primitive tribal population dwelling in and around forest in India have been aware of the bees hives as source of honey and have been extracting honey from wild bees since time immemorial (Sardar Singh,[1962], Ghosh,[1994] and rock paintings in Bhimbetka which date back to 1500 years BC, are conclusive proof thereof (Kshirsagar, [1998]); link between forests and honeybees was obvious. With colonial era, forest dwelling people became alienated as forests were deemed to be "reserved". Moreover,

the then forest resource managers considered timber/ firewood /industrial wood etc as primary products and potential of the forest resources to support honey bee colonies, got relegated to minor product. Forest bees are non amenable to domestication and apiculture was introduced as cottage scale industry. There have been sporadic efforts to introduce modern concepts of apiary by inclusion of bee keeping as a subject to be taught in Agriculture Colleges at Coimbtore, Punjab, Coorg, UP, and Pune around 1930 to 1938 (Sardar Singh,[1962], (Ghosh,[1994]). In Maharashtra State, Central Bee Research Institute, KVIC was established initially as research station in Mahabaleshwar in 1952, which later was shifted to Pune in 1962, the institute has played a major role in imparting training and extension activity since then.

Services rendered by pollinators were recognized and efforts made to enhance their services but there has been greater emphasis on bees that are amenable to domestication and honey production in this way has made great strides. Obvious link between forest dwelling bees and services rendered by them to agriculture, forage crops, horticulture, etc, however, has not received adequate attention. Honey collection from wild bees has been a traditional livelihood activity of forest dependent local communities and improved methods that entail minimal risk to life and limb of collectors and minimal destruction to bee colonies, have been introduced as a part of joint forest management practices in recent time as in Bhamragad Forest division. [Personal communication, Sarfraj Khan, 2015]. Focused, concerted efforts to augments bee flora for wild ranging bees, are not evident.

a) Honey as Minor Forest Produce from managed forests / paradigm shift in stake holders

PESA /FERA and minor forest produce - Objectives of managing forest land resources are being realigned as is evident from enactments made by the parliament that have *inter alias* conferred rights on minor forest produce on those residing in scheduled areas and later on such benefits have been extended to "forest Dwellers" by way of community rights, in non scheduled areas also. There is a shift from managing extensive forest estates that are free from encumbrances / rights, primarily for wood [timber, firewood] production, to managing forest resources to foster link between persons residing in scheduled areas and forest resources – as enshrined in Panchayatraj Extension to Scheduled Areas [PESA] Act, 1996. [GoI, 1996]. The Forest dweller's Rights Act, [FRA] 2006 [GoI,[1], 2006] conferred land rights on individuals so that they can to cultivate lands under their control as also exercise community rights to control and manage forests, that were being used by them traditionally, mostly as concessions.

b) Land utilization and its sustainable use -

Extent of forest fringe areas suitable for eco friendly apiculture on private as also community lands is vast. Extensive area [1,33,404 ha] that was illegally encroached upon had been regularized in Maharashtra State till 1980 [SEVAK, 2008]. With introduction of FRA forest dwellers are entitled to rights on land and in State of Maharashtra alone, 3.38 lakh claims over lands measuring 1.63 lakh hectares, are reported to have been registered. Previous regularized encroachments as also new claims settled under FRA, has resulted in beneficiaries having land holdings that are marginal in extent and suboptimal in productivity. Will such land distribution and or conferment of community rights on minor forest produce in itself, will be adequate to mitigate "historical injustice" was a point raised for judicial review under the writ petition filed by a group of Pune based retired forest officers, vide petition number 2547 / 2008, filed in Mumbai High court [SEVAK, 2008. There could be avenues for ecologically sustainable optimal land use other than agriculture there on and apiary could be one such option.

c) Honey bee keeping and Biodiversity

Over past million years Bees and flowering plants have evolved together as one biological unit and hence bee fauna is an indication of healthy forest and its natural balance. Forest and agricultural belts around it, these are the best areas for promotion of beekeeping to promote income generating activity to the rural and tribal population depending upon forests for their livelihood [Phadke,2008]. Biodiversity committees to be constituted under the Biodiversity Act 2005 for the purpose of promoting conservation, sustainable use and documentation of biological diversity including preservation of habitats, conservation of land races, etc and chronicling of knowledge relating to biological diversity etc (Govt. of India , 2005)and bee keeping can be an integral part of such activities.

d) Reported success stories from Israel

Israel has 450 beekeepers who manufacture 3,600 tons of honey annually, for growing local consumption as also export [Green Prophet, 2010]. Like our forest dwellers, Israel's bee keepers too face difficulties; their land holdings are meager and have low productivity. In addition, majority of their native plants blossom only once a year, after the winter rains. Successful apiary practices by the farmers is now based *inter alias* on nectar yielding exotic Eucalyptus species that support bees during lean period in nectar /pollen production. This has enabled enterprising farmers in getting substantial honey and allied products from their own limited land holdings as also the community lands.

Israel has limited land resources [20,770 km ^{2}] (Maharashtra State is almost fifteen times bigger), increasing human settlement, almost desert like conditions in southern region and limited winter rains in middle and northern region. Despite of such odds, there are reports of substantial honey production and hence visit to gather first hand information and see whether it can be adopted under arid, semiarid zones in the State of Maharashtra, was planned.

e) Honey productivity in Australia

Continent Australia has extensive land mass having varied agro-climatic conditions but major central part is parched semi desert / desert, wherein precipitation is erratic. Flora and fauna of the region has evolved to survive under harsh conditions and thus many such species have performed well as exotics in new environment. In Australia, the Eucalypts are major source of nectar and pollen and quality of honey produced compares favorably with first class honeys elsewhere in the world. Most of eucalypts species flower in regular cycle, some once in year, once in two years and others with longer cycles ranging from three to four years. Australian bee keeping is mostly migratory in nature; a bee farmer has to know well in advance when nectar / pollen will occur i. e. plants will bloom indifferent areas. Eucalypts mostly bud ahead of flowering time and thus 'bud prospect' enables farmers in move well in advance. [Penfold & Willis, 1961]. Veteran bee farmers have very comprehensive and detailed information. FAO Forestry Series No 11 [1981] provides a comprehensive account of "bee important eucalypts species, their flowering time / quality of pollens and nectar and quality of resultant honey. Rural Industries Research and Development Corporation, Australian Government, has brought out a comprehensive guide indicating range of plant species to be used in urban landscapes in gardens / avenues / open spaces, rural area & bee farms, etc, under four major climatic zones, namely cool climate /temperate / hot humid / arid; species recommended include herbs / shrubs as also tree species covering information on their bloom period / source of nectar and pollens, utility of the species other than services to bees. An interesting observation therein is "A simple economic comparison between planting *E. erythrocorys* and grazing returns on the same country, showed that at even very modest returns of $2/ kg for honey, it was 5 times more valuable than grazing returns—($1000/ha or 500 kg honey/ha as compared to $230/ha for grazing). It should also be noted that some of these eucalypts flower within 2 years of planting. The program has been a great success, with continuous planning and with many beekeepers maintaining stationary operations instead of chasing wildflower flows. It demonstrates that appropriate planting can contribute significantly." [March Leech, 2012]

f) Visit & observations

For a first hand information a visit to Israel was undertaken with the facilitation by Nimbkar Agriculture Research Institute, Phaltan [NARI]. An official invitation was received from Dr. Elisha Gootwine, Department of Ruminant Research, Institute of Animal Science, Volcani Centre, Bet Dagan

With its location on the banks of Mediterranean Sea, the northern part of Israel receives limited winter rains, summers are long with hot weather from March to August. Western fringe of Israel is having undulating to hilly terrain and has pronounced winters and winter rains including occasional snow fall in the hills. The area thus had been supporting typical Mediterranean agri /horticulture crops – grapes / olives / citrus / date etc. Among arboreal species of genus Citrus / Ceretonia Carobs, date etc are significant in meeting bee forage needs; however, urbanization has seriously jeopardized bee keeping" lamented Mr. Haim as we travelled to 'Mashal' on the fringe of Rehovot, to visit entrepreneur Mr. Doron Livne's plot.

A small plot within a residential settlement at Kfar Bilu, had single storey building and with back yard say 20 X 20 M; the plot continues to be an only source of

livelihood. There were about hundred exotic eucalypts [five to six species] on the plot. Though winter rains had not set in yet, trees were in bloom with bees foraging there on; > hundred bee boxes underneath trees were buzzing with constant bee activity. Saplings were provided by KKF –JNF officials and hand hold support provided during planting; drip irrigation provided till saplings were established.

Bees Foraging range is wide and encompasses areas of 2 to 3 radius around the plot to the advantage of those practicing horticulture in the vicinity. Sharing of resources is thus to the advantage of both. There are [self imposed] restrictions on number of boxes that an entrepreneur can set up on his land – in case of (rare) dispute, issues are addressed by the overseeing agencies. In addition to honey production, "queen bees" were being raised for building nuclei of new colonies (specially designed slots embedded in the brood chamber frames). There were facilities to extract honey by centrifugal rotation of frames without causing harm to brood, process for enhancing honey quality and shelf life / honey bottling as also for bee wax collection. Setting up new frames for establishing new hive boxes was in progress.

There was need to assist by way of replacing casualties in saplings planted and tending saplings that have lagged behind in growth or are malformed - coppicing or pollarding malformed / top broken plants for attaining healthy, multiple stemmed trees that can support more foliage / abundant flowering.

g) Visit to farm of Head of the Beekeepers Organization.

Mr. Boaz had more resources/ was more experienced and having senior position within local community; an opinion maker or say local leader. Preparations for coming season were on a war footing – boxes were being cleaned and repaired and facilities being overhauled; there were two rows of tree on either side of open space within, where in bee boxes were put in groups of 3 to 4 boxes resting over small metal stands. Local community was motivated to utilize local garbage dump area by planting nectar trees there on. Seasonal stream, passing by the village, had been channelized and trees planted along stream bank – now the area is utilized also for recreational purpose. All such area is being utilized by bees for forage.

h) Visit to Hameysdim Kefar Bilu farm

Mr. Lin having experience of > four decades and has well established business [website [www.linfarm.co.il]. Almost state of the art technology backed up with equipments like solar energy is used for melting wax / heating honey up to desired temperatures for avoiding crystallization during storage – without loss of essentials elements.

Apiary orientation and training facility – A facility to sensitize / orient youth on apiculture practices and environmental education – emphasis on need for bee keeping / its advantages was seen.

The retail outlet has plethora of honey based products – variety of honey including those having special medicinal attributes, bread spread /royal jelly, slice of honey comb, etc.

i) *Nursery unit, KKL – JNF, Bet Nehemia 73140*

The central agency that plays pivotal role of collecting quality seeds and catering to the needs of all the field units [no supplies to any individuals or private agency]. High quality seed by separating minute seeds, is its hall mark. Staff members were very meticulous in "separating seed from chaff" and maintaining specific records – resulting in high quality reliable seed, ndicating specific geographic location, where from it was collected which is very useful for cross referencing and provenance /progeny testing.

j) Nectar species seeds made available are

Following apiary friendly tree species seeds are available at the facility

Eucalyptus erythronema, / orbifera / leucoxylon / colycogona / dellsii / camaldulensis / torquata / websteriana / torreliana / X trobuti / cyanophyla / X torwood /occidentalis / ptychocarpa / sticklandii / leucoxylon ssp petiolaris / platypus; Tamarix aphylla / Brachychiton species / Ceratonia siliqua / Prosopis / Moringa / Dalbergia sissoo

Shrubs /climbers include *Lavandula / Origanum / Antigonum / Grevillea / Eremophilia / Leucophyllum / Melaleuca / Salvia / Plectanthrus / Calliadra / Rosmarinus / Ocimum / Vitex*

The unit is providing excellent extension material to the users. The officials manning the positions are qualified to initiate tree genetic improvement; the scientists have already taken note of natural hybrids of Eucalyptus.

k) Further tree improvement to support apiculture,

1. Eucalypts are open pollinated and natural or induced hybridization is feasible. With time, species do adapt

Flowers and buds of 1. *Eucalyptus ptychacarpa,* 2. *E. leucoxylon* 3. *Eucalyptus X torwood.*

Varied sources of pollens and nectar [Calliandra / *Salvia / Carob / Antigonum* etc. species]

to locality factors of recipient zone – adaptations / genetic variations are thus expected. Detect of natural hybrids or developing hybrids / their progeny trials to confirm genetic gains / registering cultivars in tune with management objectives.

2. Genetic improvement for apiary is an additional criteria requiring specific parameters for selection – copious flowering / early flowering [second or third year from planting] / time of flowering and quality of nectar as also pollens (omega 3 & 6 % in essential fatty acids, etc.)
3. Guidance to tree growers on managing tree crop – thinning / coppicing /pollarding etc. Rather than rows of trees with distance of 3 to 4 meters between rows and within row, creation of hedge like structure with closer spacing may be an option for trial. \
4. A feedback on plant type that bees prefer during different seasons and its co relationship with performance of hive could be an important tool for genetic improvement.

A quick round of the campus of Triwaks Bee Research Center in Rehovot, The Hebrew University indicated some of the important sources of honey and pollens, as also leaves. "Bees do accord preference to plant species as per the requirement of the bees during that particular phase" said the Director. He provided an over view of ongoing focus of ongoing research activity - insight to nutritional aspects of pollens and nectar / bee communication etc. It was learnt that there is an annual meeting with stake holders for exchange of information / prioritization of research agenda etc a research fellowship is available in this discipline and there is generally a good response to the same.

General outline of KKL and its specific mandate, so far as support to apiary, was provided by the Director and his associates. It was reported that the area near Beersheba, in the Negev desert, now has a forest of over 1000 ha of *Eucalyptus torquata* (coral gum), supporting hundreds of bee hives.

A number of eucalypt species have been chosen so far, on criteria of high sugar rate / long floral blooming / flowering preferably in the 'dearth' period and ability to survive without irrigation / nutritional resource, nectar or pollen, or both and other uses of the plant—shade, ornamental or energy source and proximity to crop plants and competition at crucial pollination time. Among the species chosen were *E.torquata, E. landsdowneana, E. erythrocorys, E. leucoxylon* var. *macrocarpa, E.*

calycogona, E. woodwardi and *E. occidentalis;* these were highly recommended and are now considered 'mega-producers'. It was pointed out that with suitable the selection criteria will result in further increase in production. Within this program, each year 100 000 plants are provided to beekeepers and this has resulted in 1.5 million plants in the field which has proved to be highly productive bee forage.

Conclusion

As new avenues for extending apiary to marginal forest dwelling land holders, are emerging, ways and means to support apiary need be explored. There is a lot to learn from the approaches adopted in Israel. However, area specific solutions need be adopted to suit varied agro climatic conditions obtaining in India. Aim is to have multi-location trials [3 to 4 sites] to examine suitability of species which would augment bee forage resources. Option of introducing new species also need be examined following universally accepted protocols; hence possible collaboration for pilot scale trial planting be explored. Joint forest management committees under PESA /FRA or Biodiversity Act could play a crucial role in pilot scale trials of apiary. This can be incorporated in planning and conducting trials in a participatory mode under supervision of research wing of the forest department.

Augmentation of bee flora for apiculture under joint forest management program is being initiated in Nandurbar District in the 2016 planting season – it will include identification of existing bee flora within and around area that is assigned for JFM and its potential to support natural, as also captive bee colonies, will be documented. To augment inputs required for honey production, trial planting of exotic eucalypts against local bee fauna like jamun, soap-nut, shikekai, amala, harad, karanj, neem, drumstick, nirgudi etc. is proposed.

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Parvati and the Monitor Lizard

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In Indian mythology *Gauri* - one of the forms of *Parvati* – the consort of lord *Shiva*, is said to have performed a penance while standing on a monitor lizard. She is described as "*godhasanaa bhaved gauri* " (T. A. Gopinatha Rao; p. 113)[1] (Joshi N. P.; p. 283)[2]. It can be translated as, '*Parvati* is known as *Gauri* when she performs penance standing on a monitor lizard, *godha*'.

In Sanskrit, monitor lizard is called '*godha*'. Here the root verb is "*gudha*" which means to wrap up, to envelope or to conceal.

In the sculptures at Rani Ki Vav (Patan, Gujarat) – a unique intricately carved step well from the Solanki dynasty in 11th c. constructed as a memorial to king Bhimdev I by queen *Udayamati*, fifteen forms of *Parvati* are depicted. Among these sculptures there is one image of *Parvati* in penance standing on a beautifully carved monitor lizard. This form of *Parvati* or *Gauri* who has engaged herself in a penance is known as '*panchagni*

tapasya' meaning penance in five types of fires. She is depicted as standing in the middle of four fire altars and looking up at the burning sun.

In the sculptures found in South India, monitor lizard is sometimes shown to be the carrier vehicle of goddess *Parvati*. (Joshi N. P.; p. 196).

A sculpture of a tiger-faced *Matruka* – one of the minor goddesses - found at Kaushambi Allahabad, shows a monitor lizard on her left lap. (Joshi N. P.; p. 252).

The *Uma-Maheshwar* images sometimes show the monitor lizard as the mount of *Parvati*. (Joshi N. P.; p. 306).

Yogini Kshemankari is also depicted in a sculpture from the 9th c. as standing on a monitor lizard at the '64 Yogini Temple', Hirapur, Odisha. (Suruchi and Satish Pande; p. 279)[3]

The reason for choosing a reptile like the monitor lizard as a mount for penance is open to interpretation. I feel that it may be due to the solitary nature of this secretive reptile which is shy and avoids humans. It has keen eyesight and is said to detect human movement from about 250 meters away. Monitor lizards dwell in various kinds of habitats from open areas to forests. They shelter in burrows or tree hollows. This behavior also tallies with its apt Sanskrit name '*godha*' which refers to the habit of concealing oneself. Since the goddess was engaged in a penance, she preferred a completely solitary undisturbed atmosphere. Hence, according to my interpretation, one can say that the Indian tradition has wisely chosen the monitor lizard as her mount and has not only offered a respectful place to this reptile but has also encouraged its protection and conservation.

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Recent Sighting of Masked Booby *Sula dactylatra* in Kalyan, District Thane, Maharashtra

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Referee: Dr. Vaibhav Deshmukh

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- **Name of Species: -** Masked Booby
- **Scientific Name.** *Sula dactylatra*
- **Status: -** Least Concern (IUCN Red List, 2015).
- **Date of sighting:-** 24th July 2016.
- **Time of sighting:-** 10.00 AM
- **Weather parameters: -** Sunny
- **Number of times sighted: -** Once.
- **Number of birds: -** Single.
- **Gender of bird: -** Unknown.
- **Locality: -** Nevali Village, Near Malang Road, Kalyan (East) Thane, Maharashtra.
- **Habitat description: -** Bird was found stranded in Nevali village.
- **Distance from human habitation:-** Bird was rescued from Nevali village.
- **Any other bird/animal associates: -** None.
- **Bird Behaviour: -** Rescued Booby was very aggressive and had a broken humerus bone otherwise look healthy on rescue, took feeding of fish (Golden Anchovies) twice.
- **Threats to the habitat: -** Nil
- **Photographs: -** Attached.
- **Previous records: -** It a pelagic bird observed across Mumbai deep sea, but rarely recorded. Most records on land are usually birds stranded on shore by storm, 2 Masked Boobies already recorded stranded in Vikroli (Mumbai) and other at Arnala, Virar (Palghar) and a Red Footed Booby stranded in June at Vasai beach (Palghar) in the last 2 months.
- **Special Notes:** The rescued booby did not survive the stress due to bony injury.

Recent Sighting of Pygmy Wren Babbler *Pnoepyga pusilla* In Chopta, Uttarakhand

Prathamesh Desai[1] **, Kiran Kadam**[2] **and Yuvraj Patil**[3]
(Emails:[1]prathamthebirdy@gmail.com; [2] kadam.kiran9219@gmail.com); [3] yuvi1567@gmail.com)

Citation: Desai P, Kadam, K. and Patil, Y. (2016). Recent Sighting of Pygmy Wren Babbler *Pnoepyga pusilla* In Chopta, Uttarakhand
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Referee: Niranjan Sant

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- **Name of Species: -** Pygmy Wren Babbler
- **Scientific Name**- *Pnoepyga pusilla*
- **Status: -** Least Concern (IUCN Red List, 2015).
- **Date of sighting:**- 7th May 2016.
- **Time of sighting:-** 04.00 PM
- **Weather parameters: -** Cloudy with hail storm
- **Number of times sighted: -** Once.
- **Number of birds: -** Single.
- **Gender of bird: -** Unknown.
- **Locality: -** Between Makku farm and Makku bend, Chopta, Uttarakhand.
- **Habitat description: -** Bird was sighted in dense temperate forest patch under a large boulder near Chopta village.
- **Distance from human habitation:-** About 7 km from Makku farm.
- **Any other bird/animal associates: -** In the same habitat we were also lucky to hear Grey-bellied Tesia *(Tesia cyaniventer)*.
- **Bird Behaviour: -** This small tiny vocal babbler was observed for a while through binoculars and we could see the white belly with spots and pale spotted wing coverts.
- **Threats to the habitat: -** Nil presently.
- **Photographs: -** Attached.
- **Previous records: -** The bird is considered to be a resident species in Nepal and North East India (Ali & Ripley 1986; Rasmussen & Anderton 2012). However, observations of Pygmy Wren Babbler in the Himalayan areas of Uttarakhand are rare and probably unrecorded (vide distribution map in Grimmett et al. 2011:354). Published bird checklist from similar birding areas (Avibase bird checklist – Kedarnath Wildlife sanctuary) and nearby areas (birds of Rajaji National Park by Manoj Kulshreshtha; Pandey et al. 1994; Sharma et al. 2003) have no records of Pygmy Wren Babbler. Similarly the bird is also not listed in official checklist of birds published by the Uttarakhand forest department (Mohan D & S Sondhi 2014) and also the bird is not mentioned in article published in Indian Birds Vol.1 No. 5 (September – October 2005) Bird watching in Kedarnath Musk Deer Sanctuary, Chamoli district, Uttaranchal: the upper Garhwal Himalayas by Arun P. Singh. The species is rarely recorded from Uttarakhand state.
- **Special Notes:** The bird was again sighted later after 2 days by Yuvraj Patil (per com).

Recent Sighting of Snowy-browed Flycatcher *Ficedula hyperythra* In Chopta, Uttarakhand

Prathamesh Desai[1] , Kiran Kadam[2] and Himanshu Tembhekar[3]
(Emails: 1prathamthebirdy@gmail.com); 2kadam.kiran9219@gmail.com); 3tembhekarhimanshu44@gmail.com)

Citation: Desai P, Kadam K and Tembhekar H. (2016). Recent Sighting of Snowy-browed Flycatcher *Ficedula hyperythra* In Chopta, Uttarakhand.
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Referee: Dr. Satish Pande

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- **Name of Species: -** Snowy browed Flycatcher
- **Scientific Name-** *Ficedula hyperythra*
- **Status: -** Least Concern (IUCN Red List, 2015).
- **Date of sighting:-** 7th May 2016.
- **Time of sighting:-** 08.00 AM
- **Weather parameters: -** Cloudy
- **Number of times sighted: -** Once.
- **Number of birds: -** Single pair.
- **Gender of bird: -** Male and Female.
- **Locality: -** Between Makku farm and Makku bend, Chopta, Uttarakhand.
- **Habitat description: -** Bird was sighted in dense temperate forest patch in a crevice under a large boulder at a lower elevation to Chopta village.
- **Distance from human habitation:-** About 6 km from Makku farm
- **Any other bird/animal associates: -** In the same habitat we were also lucky to hear Grey-bellied Tesia *(Tesia cyaniventer)*.
- **Bird Behaviour: -**The pair was observed from a distance through binoculars and the male was observed performing a courtship dance with its tail up and chasing the female, both the birds were observed in dense canopy as well as near the ground.
- **Threats to the habitat: -** Nil presently.
- **Photographs: -** Attached.
- **Previous records: -** Snowy Browed Flycatcher is considered a summer migrant in hilly regions of Himalayas in North Uttarakhand and probably only few sightings are recorded from Uttarakhand state., India

Recent Sighting of Tickell's Thrush *Turdus unicolor* in Pune, Maharashtra

Swapnil K. Thatte
(Email: swapnil.thatte@gmail.com)

Citation: Thatte S. (2016). Recent Sighting of Tickell's Thrush *Turdus unicolor* in Pune, Maharashtra. *Ela Journal of Forestry and Wildlife* 5(3): 254
Date of Publication: 30-6-2016

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Referee: Rajgopal Patil

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- **Name of species-** Tickell's Thrush
- **Scientific Name-** *Turdus unicolor*
- **Status-** Least Concern (IUCN Red List).
- **Date of sighting-** 24th January 2016
- **Time of sighting-** 04.50 PM.
- **Weather parameters-** Clear sky.
- **Number of times sighted-** Twice
- **Number of birds-** 1
- **Gender of bird-** Male
- **Locality-** Tamhini (Mulshi Taluka), Pune district, Maharashtra
- **Habitat description-** The individual was sighted in a partially dried stream within a dense evergreen forest patch of Tamhini.
- **Distance from human habitation-** 4 km.
- **Any other bird/animal associates-** Indian Blackbird, Orange-headed Thrush, Tytler's Leaf Warbler.
- **Bird behaviour-** This species migrates to peninsular India from Himalayas in winter. During sighting this thrush had came to drink water from the stream near a dense Karvi (*Strobilanthes callosa*) clump. The bird was aggressive and was seen fighting with the Indian Balckbird (*Turdus simillimus*). Ultimately the Indian Blackbird won this encounter and was the first to drink water.
- **Threats to the habitat-** No threat in this patch. However, development activities are leading to habitat modification in the adjacent forested areas.
- **Photographs-** Attached.
- **Previous record-** Sighted by Chinmay Rahane at Tamhini, Pune, on 27th December, 2015 (per.com) and by Siddharth Damle, at Sinhgad Valley, Pune, on 28th December, 2015 (per.com).

Recent Sighting of Rufous-bellied Eagle *Lophotriorchis kienerii* In Matheran, District - Raigad, Maharashtra

Prathamesh Desai[1] **, Parag Sakpal**[2] **and Rajesh Poojary**[3]
(Emails: [1]prathamthebirdy@gmail.com; [2]sakpalparag@gmail.com; [3]rajesh07poojary@gmail.com)

Citation: Desai P, Sakpal P and Poojary R. (2016). Recent Sighting of Rufous-bellied Eagle *Lophotriorchis kienerii* In Matheran, District - Raigad, Maharashtra. *Ela Journal of Forestry and Wildlife* 5(3): 255

Date of Publication:
30-6-2016

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Referee: Nirajan Sant

- **Name of Species: -** Rufous-bellied Eagle
- **Scientific Name-** *Lophotriorchis kienerii*
- **Status: -** Least Concern (IUCN Red List, 2015).
- **Date of sighting:-** 2nd June 2016.
- **Time of sighting:-** 08.00 AM
- **Weather parameters: -** Clear Sunny
- **Number of times sighted: -** Thrice in an hour's time span.
- **Number of birds: -** Single.
- **Gender of bird: -** Unknown.
- **Locality: -** Foothills of Matheran.
- **Habitat description: -** Bird was sighted hunting in mountain valley close to Panorama Point.
- **Distance from human habitation:-** 2 km from Aanand Wadi
- **Any other bird/animal associates: -** In the same habitat we came across Black Eagle *Ictinaetus malaiensis*.
- **Bird Behaviour: -** Bird was observed hovering in valley in search of prey
- **Threats to the habitat: -** Deforestation and cattle grazing.
- **Photographs: -** Attached.
- **Previous records: -** For Mumbai region previous records are from Tungareshwar Sanctuary, Karnala Sanctuary and Alibag.

Recent Sighting of Rufous-bellied Eagle *Lophotriorchis kienerii* in Alibag, District Raigad, Maharashtra

Pravin H. Kawale
(Email: kawale.pravin@gmail.com)

Citation: Kawale, P. H. (2016). Recent Sighting of Rufous-bellied Eagle *Lophotriorchis kienerii* In Matheran, District - Raigad, Maharashtra. *Ela Journal of Forestry and Wildlife* 5(3): 256

Date of Publication:
30-6-2016

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Copyright: © Kawale, P. H. 2016

Referee: Niranjan Sant

- **Name of Species: -Rufous bellied Eagle**
- **Scientific Name-** *Lophotriorchis kienerii*
- **Status: -** Least concrned. ICUN 2012
- **Date of sighting:-** 7 May,2016
- **Time of sighting:-** 10.30 am
- **Weather parameters: -** Sunny.
- **Number of times sighted: -** Once.
- **Number of birds: -** Single.
- **Gender of bird:** Unknown.
- **Locality: -** At Kanakeshwar hill,Alibag,Raigad.
- **Habitat description: -**; Semi-evergreen & moist deciduous forest.
- **Distance from human habitation:-**1 km.
- **Any other bird/animal associates:** Oriental Honey Buzzard and Black Kite.
- **Bird Behaviour: -** Two Oriental Honey Buzzards were flying in the sky.
- **Threats to the habitat: -** Deforestation & habitat modification.
- **Photographs: -** Attached.
- **Previous records: -** None from Alibag, There was one sighting at Karnala WL Sanctuary, 50 km away from Kanakeshwar, Alibag.

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Recent Sighting of Lesser Yellownape *Picus chlorolophus* in Mahabalshwar, Satara District, Maharashtra

Swapnil K. Thatte
(Email: swapnil.thatte@gmail.com)

Citation: Thatte, Swapnil K (2016). Recent Sighting of Lesser Yellownape (Picus chlorolophus) in Mahabalshwar, Satara District, Maharashtra
Ela Journal of Forestry and Wildlife 5(3): 257

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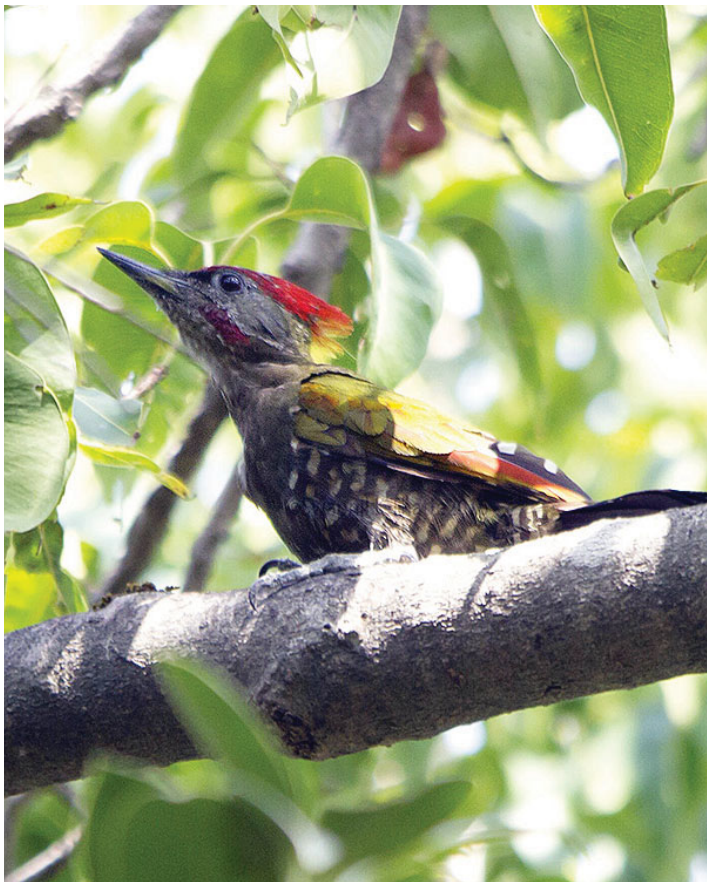
Referee: Dr. Satish Pande



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- **Name of species-** Lesser Yellownape
- **Scientific Name-** *Picus chlorolophus*
- **Status-** Least Concern as per the IUCN Red List of Threatened Species.
- **Date of sighting-** 15.05.2016
- **Time of sightings-** 08.00 A.M, 11.30 A.M.
- **Weather parameters-** Clear sky.
- **Number of times sighted-** Twice
- **Number of birds-** 3
- **Gender of bird-** Male/Female
- **Locality-** Mahabaleshwar, Satara, Maharashtra
- **Habitat description-** Partially dried up stream in the dense evergreen forests & roadside forest land.
- **Distance from human habitation-** 1.5 km.
- **Any other bird/animal associates-** Nilgiri Wood Pigeon, Crested Serpent Eagle.
- **Bird behaviour-** Bird & mammal activity was on the higher side due to late night rains. One individual was sighted near partially dried up stream giving loud calls in the morning and one pair was seen roadside in search of food hitting the bark.
- **Threats to the habitat-** Deforestation.
- **Photographs-** Attached
- **Previous record-** Rare resident on Crestline region of the Northern Western Ghats.
  On 21st April, 1984, Near Forest Dept lodge, Lingamala, Mahabaleshwar (Bradbeer 1987), Flock of 7 between 6th to 9th May, 1984 (Mundkur 1984.)

Recent Sighting of Green Avadavat *Amandava formosa* in Amaravati District, Maharashtra

Sarang Pimparkar
(Email: sarang_pacific@hotmail.com)

Citation: Pimparkar, S. (2016). Recent Sighting of Green Avadavat (Amandava formosa) in Amaravati District, Maharashtra. *Ela Journal of Forestry and Wildlife* 5(3): 258

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Referee: Pramod Deshpande

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- **Name of species-** Green Avadavat / Green Munia.
- **Scientific Name:** *Amandava formosa*
- **Status-** Vulnerable as per IUCN.
- **Date of sighting-** 24.07.2016.
- **Time of sighting-** 7.20 AM.
- **Weather parameters-** Cloudy and foggy.
- **Number of times sighted-** Three.
- **Number of birds-** One.
- **Gender of bird-** Male.
- **Locality-** Near Shahpur Village at Chikaldara, Dist Amravati, Maharashtra.
- **Habitat description-** Grass and low bushes, Shrubby Forest, Near Water.
- **Height of grassland-** Around 1 meter.
- **Distance from human habitation-** 1 km.
- **Any other bird/animal associates-** No.
- **Bird behaviour-** The bird was singing.
- **Threats to the habitat-** It is a popular cage bird and the main threat is trapping in spite of protection given by the WPA. Decreasing habitat due to depleting scrub and grasslands due to increased agriculture fields, use of insecticides and pesticides.
- **Photographs-** Attached.
- **Previous record-** In 1976, as bird was seen in Chikhaldara. Breeding records from Melghat, Semadoh. Old records from Thane (Tansa lake), Nandurbar and Solapur.

Recent Sighting of Black Eagle *Ictinaetus malaiensis* in Chalisgaon, District Jalgaon, Maharashtra

Aman Anil Gujar
(Vanyajeev Sanrakshan Sanstha Jalgaon; Email: aman@vjss.org)

Citation: Gujar, A. A. (2016). Recent Sighting of Black Eagle *(Ictinaetus malaiensis)* in Chalisgaon, District Jalgaon, Maharashtra
Ela Journal of Forestry and Wildlife 5(3): 259

Date of Publication:
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Referee: Dr. Satish Pande

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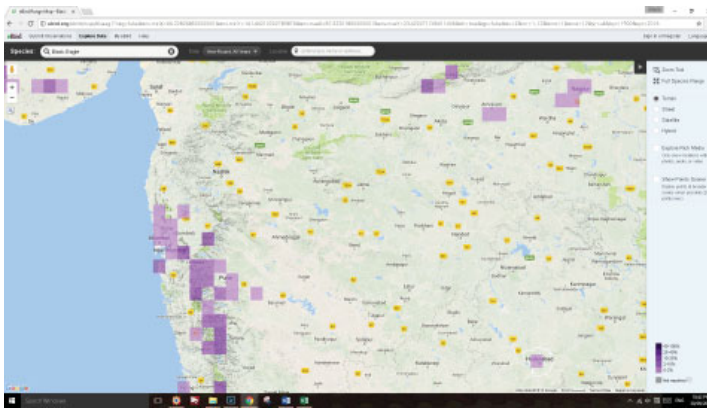
- **Name of Species:** Black Eagle
- **Scientific Name:** *Ictinaetus malaiensis*
- **Status:** Least concerned. ICUN 2012 ver 3.1
- **Date of sighting:** 27 August 2016
- **Time of sighting:** 12.08 PM
- **Weather parameters:** Sunny.
- **Number of times sighted:** Thrice
- **Number of birds:** Single
- **Gender of bird:** Unknown
- **Locality:** At Patnadevi, Chalisgaon, Dist. Jalgaon, and Maharashtra.
- **Habitat description:** Ttropical dry deciduous forest.
- **Distance from human habitation:** 4.5 km.
- **Any other bird/animal associates:** No other raptors were seen in that area.
- **Bird Behaviour:** Black Eagle was flying adjacent the mountain cliff on the updraft.
- **Threats to the habitat:** Deforestation, human disturbance & habitat modification.
- **Photographs:** 2 photos by Aman Gujar.
- **Previous records:** None, reported from Jalgaon or surrounded area. (Ebird Screenshot attached.)
- **Acknowledgements:** Ravindra Sonawane, Balkrishna Devre, Rahul Sonawane, Prasad Sonawane, Sagar Khedkar, Hrishi Rajput, Hemraj Shinde, Yogesh Galfade, Satish Kamble, L.M Rathod (RFO), Amruta Bhoi (Forest Gaurd), R B Shete (Forester Patnadevi) and Vanyajeev Sanrakshan Sanstha (VJSS) Jalgaon.



Recent Sighting of Black-throated Munia *Lonchura kelaarti* in Tamhini, District Pune, Maharashtra

Sandip Telang & Rudraksh Chodankar
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Citation: Telang, S. & Chodankar, R. (2016). Recent Sighting of Black-throated Munia *Lonchura kelaarti* in Tamhini, District Pune, Maharashtra

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Referee: Dr. Satish Pande

- **Name of Species:** Black-throated Munia
- **Scientific Name:** *Lonchura kelaarti*
- **Status:** Least Concern ver 3.1 Version 2016-3
- **Date of sighting:** 25 December,2016
- **Time of sighting:** 3.30 pm
- **Weather parameters:** Sunny.
- **Number of times sighted:** Once for more than 20 Minutes.
- **Number of birds:** Two.
- **Gender of bird:** Could be a pair.
- **Locality:** Tamhini, Pune.
- **Habitat description:** Moist deciduous with some evergreen forest patches.
- **Distance from human habitation:** 2-3 km.
- **Any other bird/animal associates:** No.
- **Bird Behaviour:** The pair was probably displaying courtship behaviour. Also observed them feeding on grass seeds and while drinking water.
- **Threats to the habitat:** Deforestation and habitat modification.
- **Photographs:** Attached.
- **Previous Record:** Pallavi Shivalkar, Swapnil Thatte & Shruti Dudhane from same area.

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