

equity index with the GPP to propose a gross equity product as $GEP = \eta X = \eta^2 E$ for the comity of 184 nations. Table 1 shows the protocol for the computation of the GEP and equity index from the GPP for 184 countries in the IMF list. Indeed, this can be done for a country by taking state-wise figures, etc. if fine-grained data are available about the income distribution in the country. The equity index is a second-order indicator that is a promising alternative to the Gini index as a measure of inequality⁴.

We can easily establish the connection between the Gini index of inequality and

the equity index using data from the US Census⁵ for 2000–2010. The equity index and the Gini index are almost perfectly negatively correlated (Pearson's correlation coefficient = -0.9967). Figure 1 shows the scatter plot of the equity index and the Gini index of income inequality for shares of household incomes by quintiles in the US from 2000 to 2010.

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Geoffroy's Trident Leaf-nosed bat, *Asellia tridens* (Geoffroy, E., 1813) from India

Bats, being pollinators, seed dispersers and insect eaters, play an imperative role in the betterment of ecosystems and the environment we live in. India harbours 118 bat species out of the 1117 reported worldwide in rather two unequal sub-orders – Yinpterochiroptera and Yangochiroptera¹.

Rajasthan part of the Thar Desert in India has not only seen remarkable depletion in species diversity of bats, but many of their roosts reported earlier have either been destroyed in the pretext of

prevailing misconceptions or evicted casually over a period of the last two decades due to lack of adequate awareness among locals regarding ecological and economical significance of bats. Six Yinpterochiroptera (Indian Flying Fox, *Pteropus giganteus*; Short-nosed fruit bat, *Cynopterus sphinx*; Fulvous Fruit bat, *Rousettus leschenaulti*; Greater Mouse-tailed bat, *Rhinopoma microphyllum*; Lesser Mouse-tailed bat, *Rhinopoma hardwickii* and Blyth's Horseshoe bat, *Rhinolophus lepidus*) and four Yangochi-

roptera (Egyptian Tomb bat, *Taphozous perforatus*; Naked-rumped Tomb bat, *Taphozous nudiventris*; Asiatic Greater Yellow House bat, *Scotophilus heathii* and Indian Pigmy bat, *Pipistrellus tenuis*) species have been reported in the recent past collectively from Jodhpur, Jaisalmer and Bikaner districts in the Rajasthan part of the Thar Desert. Whereas two species each of sub-orders Yinpterochiroptera (Greater False Vampire, *Megaderma lyra* and Fulvous Leaf-nosed bat, *Hipposideros fulvus*) and Yangochiroptera (Dormer's bat, *Pipistrellus dormeri* and Egyptian Free-tailed bat, *Tadarida aegyptiaca*) reported here earlier through early 1960s to 1980s have been found missing^{2–6}.

During our bat survey in January 2011 at Gajroopsagar tunnel (26.94722°N and 70.92888°E) bat roost in Jaisalmer district (Figure 1), we observed two individuals of bat, *R. leschenaulti* and a single individual of Trident Leaf-nosed bat, *Asellia tridens*. They were found roosting in association with *R. microphyllum*, *R. hardwickii* and *R. lepidus*⁷.

The Gajroopsagar tunnel roost is geographically located approximately 386 km northeast (aerial distance) to its earlier reported nearest roost in Karachi, Pakistan. We undertook a repeat survey of this bat roost on 12 January 2013 and found six individuals of *A. tridens* roosting in association with the other above-mentioned bat species. We caught one of these six individuals to examine morphological characteristics and measurements

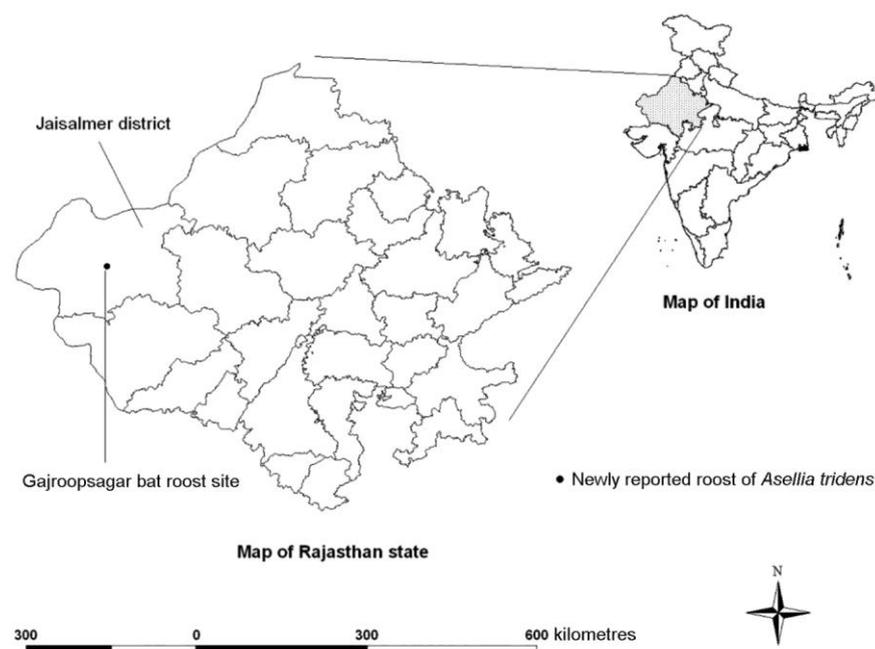


Figure 1. Geographical representation of roost of *Asellia tridens*.



Figure 2. An individual of *Asellia tridens* caught from Gajroopsagar tunnel bat roost at Jaisalmer district of Rajasthan, India.

of various body parts required for proper identification. The description of characteristics and measurements is given below.

External characters: The nose-leaf was distinct, with three cusps (trident) on the leaf; the outer two were blunted, whereas the central one was pointed. Tail was 27.4 mm in length and characteristically its tip protruded 4 mm from the poorly developed interfemoral membrane. The ears were broad with convex anterior margin, slightly concave posterior border, and pointed tip but without tragus (Figure 2). The pelage was relatively short, about 3.8 mm mid dorsally; and not extended onto the interfemoral membrane. The hair bases were paler and showed through on the crown of the head and shoulders. The belly was paler buffy whitish throughout, whereas back was pale greyish-brown.

Measurements: Forearm (FA) length – 54.1 mm; head body (HB) length – 54.8 mm; tail (T) length – 27.4 mm; ear (E) length – 19.3 mm; wing span (WS) – 270.3 mm; hind foot (HF) – 9.7 mm; length of tibia (TIB) – 19.2 mm; length of fifth metacarpal (5 Mt) – 31.4 mm; length of fourth metacarpal (4 Mt) – 36.6 mm; length of third metacarpal (3 Mt) – 38.3 mm; length of first phalanx of third metacarpal (1Ph 3 Mt) – 15.9 mm; length of second phalanx of third metacarpal (2Ph 3 Mt) – 17.1 mm; length of first phalanx of fourth metacarpal (1Ph 4 Mt) – 12.3 mm and length of a second phalanx of fourth metacarpal (2Ph 4 Mt) – 8.7 mm.

Cranial and dental characters: The skull was small with 16.1 mm condylo-

canine length with narrow and relatively deep rostrum. The nasal inflations were well developed, but with a less flattened upper surface. The crest was roused as a high knife-like blade in the interorbital region and the dorsal profile had an even convex curve from the nasal inflation to the lambda. The lambdoid crest was well developed. Zygomata were widely flared posteriorly with less-developed dorsal expansions. The coronoid process of each half mandible was well developed.

The upper incisor (i^2) was small, peg-like and not bicuspid. The upper canine was powerful and had well-defined posterior cusp at about half of its height, which had a straight edge at right angles to the tooth. There was no cusp anteriorly. The small premolar (PM^2) was absent, but large premolar (PM^4) was in contact with canine. Upper third molar (M^3) was comprised of a parastyle, metastyle and two commissure. First lower incisor (I_1) was tricuspidate. The lower canine was short and robust. The first lower premolar (PM_2) had half the crown area of the second (PM_4). Lower third molar (M_3) was greatly reduced with the talonid less than one-quarter the crown area of the trigonid.

Measurements: Greatest length of skull (GTL) – 18.3 mm; condylo-canine length (CCL) – 16.1 mm; length of maxillary tooththrow ($C-M^3$) – 6.8 mm; posterior palatal width (M^3-M^3) – 7.5 mm; anterior palatal width (C^1-C^1) – 4.9 mm; mandible length (M) – 12.8 mm; length of mandibular tooththrow ($C-M_3$) – 7.9 mm; zygomatic breadth (ZB) – 10.2 mm; breadth of braincase (BB) – 7.5 mm and postorbital constriction (PC) – 2.4 mm.

Taxonomically Geoffroy's Trident Leaf-nosed bat, *Asellia tridens* (Geoffroy, E. 1813) belongs to the family Hipposideridae and super family Rhinolophoidea, sub-order Yinpterochiroptera and order Chiroptera in class Mammalia of the animal kingdom. Though *A. tridens* is a widespread species ranging from West Africa, Arabia and Iran to neighbouring Pakistan, its report from the Rajasthan part of the Thar Desert is important from its distributional aspect and also to raise the tally of Indian bat species to 119.

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