

Growth in amphibian knowledge of Bhutan

Bhutan is a part of the Eastern Himalayan biodiversity hotspot harbouring ca. 200 species of mammals, 700 birds, 83 reptiles and 91 freshwater fish¹. However, despite several explorations in the country, amphibian fauna remain under-explored. Presently, a total of 40 species of amphibians have been recorded from Bhutan²⁻⁷. The global amphibian portal, AmphibiaWeb lists only seven species and needs to be updated. This includes all the living amphibian orders with 38 anurans, 1 salamander *Tylototriton himalayanus*, and 1 caecilian, *Ichthyophis sikimensis*³. Anurans are represented by seven families. Dicroglossidae is the most speciose, with 12 species under 4 genera followed by Ranidae (3 genera and 8 species) and Megophryidae (2 genera and 7 species), Rhacophoridae (2 genera and 5 species), Bufonidae (1 genera and 3 species), Microhylidae (2 genera and 2 species) and Hylidae (1 genera and 1 species). Interestingly, *Scutigera bhutanensis* is the only the endemic amphibian of Bhutan⁸. Bhutan has recorded 40 species of amphibian, while neighbouring Sikkim has 50 species⁹ and Nepal has 56 species¹⁰ showing the coefficient of biogeographic resemblance (i.e. $2C/N1 + N2$, where C = species common in two region, $N1$ = species in one region, $N2$ = species in second region) of 0.22 and 0.14 respectively. Bhutan's amphibian currently constitutes 9.61% of India's amphibian biodiversity (416)¹⁰.

Out of 20 districts in Bhutan, only 11 districts ($\leq 55\%$) were studied for amphibians. All the studies were conducted sporadically albeit in small; selected sites. Thus, extensive areas of the country remain unexplored ($\geq 45\%$). The amphibian species richness in the country peaks at 500 m amsl, where 15 out of 40 species were recorded. Although the lowest elevation zone has the highest species richness, middle elevation range (1000–2000 m) also has high species richness with range-restricted and unique species, such as *Megophrys* spp., *Amolops* spp., *Nanorana liebigii*, *Chiromantis vittatus*, *Raorchestes annandalii* and *T. himalayanus*, thus, it is important from conservation point of view. Currently, amphibian species are not listed as protected in Bhutan. In view of the rich and diverse faunal diversity in the country, it would be prudent to conduct a detailed study on amphibian fauna, so as to prepare a conservation plan for any imminent threats to the species. Among the recorded amphibian species, *Ingerana borealis* is the only 'Vulnerable' species according to IUCN's threat categories in the country and must be given the priority followed by an endemic *Scutigera bhutanensis* in future amphibian studies in Bhutan.

1. Bhutan Biodiversity Portal, <http://biodiversity.bt/bbp/theportal>.
2. Das, I. and Palden, J., *Herpetol. Rev.*, 2000, **31**, 256–258.

3. Wangyal, J. T. and Gurung, D. B., *J. Threat. Taxa*, 2012, **4**, 3218–3222.
4. Wangyal, J. T., *J. Threat. Taxa*, 2013, **5**, 4774–4783.
5. Wangyal, J. T., *J. Bhutan Ecol. Soc.*, 2014, **1**, 20–39.
6. Nidup, T., Gyeltshen, D., Penjor, Dorji, S. and Pearch, M. J., *Herpetol. Bull.*, 2016, **136**, 13–18.
7. Das, A., Sharma, P., Surendran, H., Nath, A., Ghosh, S. and Dutta, D., *Herpetol. Notes*, 2016, **9**, 261–278.
8. Ahmed, M. F., Das, A. and Dutta, S. K., *Amphibians and Reptiles of Northeast India: A Photographic Guide*, 2009.
9. Chettri, B., Acharya, B. K. and Bhupathy, S., *An Overview of the Herpetofauna of Sikkim with Emphasis on the Elevational Distribution Pattern and Threats and Conservation Issues*, 2011.
10. AmphibiWeb, <http://amphibiaweb.org>

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Indian research institutions in the Government sector in SIR 2017

Unlike other ranking exercises, e.g. ARWU, QS, THE, LEIDEN, etc. which deal only with universities and higher educational institutions, the SCImago Institutions Rankings (SIR) also cover research-focused institutions in the Government and private sector.

The latest (2017) version of the SIR report has been released on-line¹. SIR is a secondary evaluation exercise yielding a composite indicator that combines three different sets of indicators based on research performance (60% of the total weight, using primary bibliometric data

from SCOPUS), innovation outputs (20% of the total weight, based on PATSTAT) and societal impact measured by their web visibility (20% of the total weight based on Google and Ahrefs). Until 2015, as background data were also released, it was possible with the help of indirect surrogate performance indicators to observe the time evolution of progress of leading research-focused institutions over reasonably long windows^{2,3} (e.g. a seven-year window 2009–2015 in Prathap²).

However, for the last two years SIR reports only ranks, and unlike earlier

years when we reported in these pages the progress of CSIR institutions in terms of composite performance indicators^{2,3}, this year we can only show ranks within India and globally. Ranking is based on results generated each year from the data retrieved over a period of five years ending two years before the edition of the ranking. For instance, rankings for 2016 are based on results from the five-year period 2010–2014. The exception is the case of web indicators which have only been calculated for the last year. Institutions are included if they have published

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Table 1. National and global rankings of the four 'parent' agencies from India during 2009 to 2017

Indian rank 2017	Agency	Global rank								
		2009	2010	2011	2012	2013	2014	2015	2016	2017
1	Council of Scientific and Industrial Research	135	142	130	117	111	102	105	99	75
5	Indian Council of Agricultural Research	682	666	627	589	540	516	498	509	491
19	Defence Research and Development Organisation	706	697	674	646	608	590	591	615	569
41	Indian Space Research Organisation	819	810	781	731	681	648	643	646	638

Table 2. National and global rankings of CSIR and its daughter institutions from 2009 to 2017

Indian rank 2017	CSIR and its daughter institutions	Global rank								
		2009	2010	2011	2012	2013	2014	2015	2016	2017
1	Council of Scientific and Industrial Research	135	142	130	117	111	102	105	99	75
2	National Chemical Laboratory	497	532	528	520	505	498	460	441	385
3	Indian Institute of Chemical Technology	554	565	546	527	505	511	520	493	470
4	Central Salt and Marine Chemicals Research Institute	534	542	543	535	534	528	527	510	485
6	Indian Institute of Integrative Medicine					548	558	557	550	510
7	Central Drug Research Institute	657	647	625	605	575	544	537	558	512
8	Institute of Microbial Technology						587	617	644	521
9	Institute of Genomics and Integrative Biology	579	588	586	567	553	544	531	514	524
12	National Institute for Interdisciplinary Science and Technology	617	594	567	527	508	482	425	353	532
14	Institute of Himalayan Bioresource Technology									553
15	North East Institute of Science and Technology								638	556
17	Central Food Technological Research Institute	547	549	522	513	503	505	501	531	566
18	Indian Institute of Toxicology Research	563	564	553	558	588	575	592	606	568
22	Indian Institute of Chemical Biology	670	670	655	614	573	566	566	602	574
23	Central Electrochemical Research Institute	638	637	621	602	612	601	588	567	576
24	National Physical Laboratory India	715	676	626	567	544	528	501	519	582
25	Institute of Minerals and Materials Technology			687	650	627	614	601	628	585
26	Indian Institute of Petroleum									589
27	Central Institute of Medicinal and Aromatic Plants				696		602	610	611	591
29	Central Leather Research Institute	688	695	672	654	626	603	605	633	604
30	National Botanical Research Institute	724	696	654	625	611	595	616	638	605
31	National Environmental Engineering Research Institute	797	766	714	672	619	586		598	605
33	Centre for Cellular and Molecular Biology	647	632	615	585	555	565	565	552	613
35	Central Glass and Ceramic Research Institute		647	629	626	583	564	565	645	616
39	National Metallurgical Laboratory	704	704	688	659	632	621	621	608	630
40	Central Mechanical Engineering Research Institute						639	647	647	638
42	National Aerospace Laboratories					619	604	627	657	639
45	National Institute of Oceanography	734	724	690	662	649	627	630	649	646
50	National Geophysical Research Institute	808	795	763	719	675	641	630	650	658
59	Central Electronics Engineering Research Institute					632	623	644	667	679
	Count	18	19	20	21	23	26	25	27	29

at least 100 works in the SCOPUS database during the last year of the selected time period. The latest release allows us to track rankings continuously from 2009 to 2017, with gaps appearing whenever institutions fall out of the net for not meeting the inclusion criterion. In SIR 2017, 5250 institutions are ranked globally, of which 252 are from India (i.e. 4.8%). SIR 2017 shows that the govern-

ment sector in India accounts for 60 institutions (up from 59 last year⁴), the health sector for 13 (up from 12 last year), the higher education sector for 179 (up from 170 last year). This year, there is not a single research-focused institution from the private sector; Tata Sons Ltd was the solitary presence last year in this sector⁴. In 2017, 29 of the constituent laboratories of the Council of Scien-

tific and Industrial Research (CSIR) have made this cut (compared to 27 in the previous year). CSIR as a whole is also counted as a 'parent' institution and the 29 'daughter' are listed separately.

Four 'parent' agencies make the list from India; apart from CSIR, we also have the Indian Council of Agricultural Research, the Defence Research and Development Organization, and the Indian

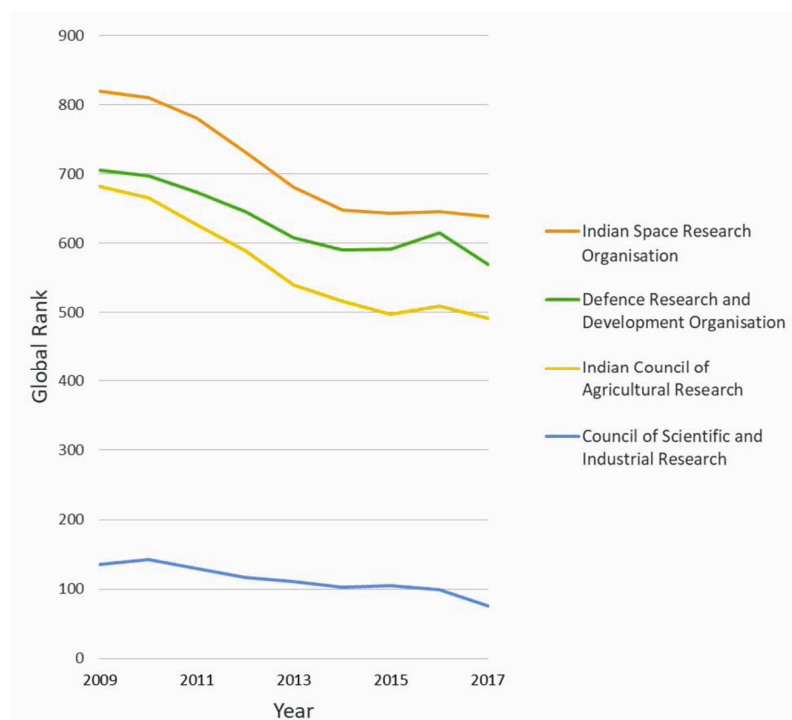


Figure 1. Progress of the top four agencies in the government sector in India.

Space Research Organisation. Table 1 shows the evolution of the rankings of the parent agencies in India, with CSIR far ahead of the rest. Figure 1 also displays the progress. It is seen that all

agencies have been moving up the league tables globally.

Table 2 lists the evolution of the rankings of CSIR and its 29 daughter institutions that made the cut in 2017. Among

the top 10 institutions in the government sector in India, CSIR contributes 7. The count has increased steadily, from 19 in 2009 to 29 in 2017. CSIR as an agency has been steadily rising in the ranks and so have many of the constituent laboratories under it. Some have been slow or stagnant, and a few have registered a decline. A noticeable fall has been noticed in case of CSIR-National Institute of Interdisciplinary Science and Technology.

1. <http://www.scimagoir.com/> (accessed between 25 and 26 July 2017).
2. Prathap, G., *Curr. Sci.*, 2014, **107**, 1121–1122.
3. Prathap, G., *Curr. Sci.*, 2016, **110**, 288–289.
4. Prathap, G., *Curr. Sci.*, 2016, **111**, 962–964.

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Drosophila ananassae* – why it is considered as a unique species in the genus *Drosophila

Drosophila is a genus belonging to the family Drosophilidae (class: Insecta and order: Diptera). It is characterized by rich species diversity at the global level as well as in India. Species belonging to the family Drosophilidae are commonly known as drosophilids. Although at the global level, the estimated number of species of the genus *Drosophila* is expected to be thousands, 1579 species have been described so far^{1,2}. In India, 156 species of the genus *Drosophila* have been reported³. This number will certainly increase if taxonomy research is continued in the subcontinent. *Drosophila*, commonly known as fruit fly, is the best biological model. *D. melanogaster* which was initially used by T. H. Morgan in 1909 for genetical studies,

continues to be the best biological model for different kinds of investigations throughout the world. However, other species have also been employed in various kinds of studies which include genetics, behaviour, evolution, molecular biology, ecology, etc. The species which have been reported from India fall into two types: new species and new records. The species which commonly occur in the country are: *D. melanogaster*, *D. ananassae*, *D. bipectinata*, *D. malerkotliana*, *D. parabipectinata*, *D. pseudoananassae*, *D. nasuta*, *D. albomicans*, *D. jumbulina*, *D. kikkawai*, *D. biarmipres*, *D. punjabiansis*, *D. buzzatii*, *D. seguyi*, *D. immigrans*, *D. suzukii*, *D. takahashii*, *D. hydei* and *D. repleta*. At the global level, a number of species have been used for

population genetic and evolutionary studies. However, in India, *D. ananassae* has been most extensively studied for such studies^{3,4}. It has been considered as a good model species for genetic, behavioural and evolutionary studies⁵.

Doleschall⁶ described *D. ananassae* for the first time from Ambon Island, Indonesia. It belongs to the *ananassae* species complex of the *ananassae* subgroup of the *melanogaster* species group⁷. It is a cosmopolitan and domestic species commonly found in India. As far as the population and evolutionary studies are concerned, *D. pseudoobscura*, *D. persimilis* and *D. robusta* from USA, *D. subobscura* from Europe and *D. ananassae* from Asia have been extensively studied⁴. In the whole genus, *D. ananassae*