

**Birbal Sahni Institute of Palaeosciences**  
**Monthly summary on Research Activities**  
**(April, 2021)**

**1. Areas of Focus:**

The institute carries out research on fundamental as well as applied aspects of Palaeosciences that includes Evolutionary history of biota, Paleoclimate, studies of past Civilization, Human history and contemporary Climate Change issues, following an integrated and multi-disciplinary approach.

Key research activities under following objectives:

- Understanding origin and evolution of life through time and space.
- Understanding climate change in recent and deep geological times.
- Understanding past civilization and human history.
- Application of Palaeosciences in exploration of fossil fuel and coal industry.

**2. Significant events**

**Floral tribute to Institute Founder, Late (Prof.) Birbal Sahni (10<sup>th</sup> April, 2021).**

Floral tributes were offered to Late Prof. Birbal Sahni on his Samadhi at the Institute premises on 10<sup>th</sup> April, 2021 by scientific, technical and administrative staff of the institute.

**List of research publications (April, 2021)**

- 1. Shukla, S.K.,** Crosta, X., Ikehara, M. (2021). Sea surface temperatures in the Indian Sub-Antarctic Southern Ocean for the last four Interglacial periods. *Geophysical Research Letters*. DOI: 10.1029/2020GL090994(**Impact factor: 4.50**).
- 2. Bogotá-A, R.G.,** Huang, H., Jardine, P.E., Chazot, N., Salamanca, S., Banks, H.I., Pardo-Trujillo, A., Torres, A.P., Dueñas, H., Star, W., Langelaan, R., Eisawi, Umeji, O.P., A.A.M., Enuenwemba, L.O., **Parmar, S.,** Silveira, R., Lim, J.Y., **Prasad, V.,** Morley, R., Bacon, C., Hoorn, C. (2021). Climate and geological change as drivers of Mauritiinae palm biogeography. *Journal of Biogeography*. DOI: 10.1111/jbi.14098. (**Impact factor: 3.72**).
- 3. Quamar, M.F., Kar, R., Thakur, B. (2021).** Vegetation response to the Indian Summer Monsoon (ISM) variability during the Late-Holocene from the central Indian core monsoon zone. *The Holocene*. DOI: 10.1177/09596836311003191. (**Impact factor: 2.35**).
- 4. Srivastava, J.,** Manjunatha, B.R., Balakrishna, K., Prajith, A., Manjunatha, H.V., Jose, J., Kumar, N. (2021). Quantitative pollen-based reconstruction of the vegetation diversity in response to the late-Holocene climate change near Karwar, south-west coast

of India. Quaternary International. DOI.: 10.1016/j.quaint.2021.03.026. **(Impact factor: 2.00).**

5. Stivrins, N., **Quamar, M.F.** (2021). Modern pollen and non-pollen palynomorphs along an altitudinal transect in Jammu and Kashmir (Western Himalaya), India. Palynology. DOI.: 10.1080/01916122.2021.1915402. **(Impact factor: 1.33).**

**Photographs showing important highlights of major programs/research activities organized during April, 2021:**

**BSIP in news-**


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Ashutosh Sharma litk

**Ashutosh Sharma litk** is at **Birbal Sahni Institute of Palaeobotany.**  
25 Mar • Bareilly •

Multigrain Laddoos (balls of cooked, powdered grains and cereals) were consumed in the Harappa, Rajasthan of 4000 years ago, as they are now! This sample below was likely also used in a ritual (prasadam?). So interesting! Especially considering that the enigmatic Sindhu-Saraswati civilization is often thought of as not being related to the later developments. Major elements of civilizational continuity are often under- appreciated.

<https://fb.watch/4s3582JNLJ/>



### Harappan people ate multigrain, high-protein 'laddoos': Study

Mohita Tewari | TNN | Mar 25, 2021, 12:25 IST

BSIP Scientists Analyse 4000-Year-Old Food Balls



LUCKNOW: A scientific study of the material found during an excavation in Rajasthan has revealed that the Harappan people used to consume high-protein, multigrain 'laddoos' (food balls) around 4,000 years ago, which indicates that the inhabitants practised agriculture under good (wet) climatic conditions.

At least seven 'laddoos' were discovered in 2017 during the excavation of a Harappan archaeological site at 4MSR (earlier known as Binjor) in western part of Rajasthan (near Pakistan border) between 2014 and 2017.

