



ORIGIN OF MULTICELLULAR LIFE

The discovery in Gabon of more than 250 fossils in an excellent state of conservation has provided evidence, for the first time, of the existence of multicellular organisms 2.1 billion years ago. These new fossils, of various shapes and sizes, imply that the origin of organized life is a lot older than is generally admitted, thus challenging current knowledge on the beginning of life. These specimens were discovered and studied by an international multidisciplinary team of researchers led by Abderrazak El Albani of the Laboratoire "Hydrogéologie, Argiles, Sols et Altérations" (CNRS/Université de Poitiers).

These specimens, which have various shapes and can reach 10 to 12 centimeters, are too big and too complex to be single-celled prokaryotes or eukaryotes. This establishes that different life forms co-existed at the start of the Proterozoic, as the specimens are well and truly fossilized living material.

To demonstrate this, the researchers employed cutting-edge techniques such as an ion probe capable of measuring the content of sulfur isotopes made it possible to map the relative distribution of organic matter precisely. In addition, using an ultra-sophisticated, high-resolution 3D scanner (also known as X-ray microtomograph), they were able to reconstitute the samples in three dimensions and, in particular, assess their degree of internal organization in great detail, without compromising the integrity of the fossils, since the method is non-invasive. These organisms lived in colonies: more than 40 specimens per half square meter were sometimes collected. Consequently, they constitute the oldest multicellular eukaryotes ever described to date.

Reference

1. El Albani A, Bengtson S, Canfield DE, *et al.* (2010). Large colonial organisms with coordinated growth in oxygenated environments 2.1 billion years ago. *Nature*, 2010; 466 (7302): 100 DOI: [10.1038/nature09166](https://doi.org/10.1038/nature09166)

EVOLVING TIBETANS

Tibetans have mutations in numerous genes related to how the body uses oxygen. A comparison of the genomes of 50 Tibetans and 40 Han Chinese shows that ethnic Tibetans split off from the Han less than 3,000 years ago and since then rapidly evolved a unique ability to thrive at high altitudes and low oxygen levels.

The genome-wide comparison, performed by evolutionary biologists at the University of California, Berkeley, uncovered more than 30 genes with DNA mutations that have become more prevalent in Tibetans than Han Chinese, nearly half of which are related to how the body uses oxygen. One mutation in particular spread from fewer than 10 percent of the Han Chinese to nearly 90 percent of all Tibetans. The analysis revealed that the common ancestors of Tibetans and Han Chinese split into two populations about 2,750 years ago, with the larger group moving to the Tibetan plateau. That group eventually shrank, while the low-elevation Han population expanded dramatically. Today, the Han Chinese are the dominant ethnic group in mainland China. The Tibetan branch either merged with the people's already occupying the Tibetan plateau, or replaced them.

Single-nucleotide polymorphisms (SNPs), with the most dramatic change in frequency, from 9 percent in Han Chinese to 87 percent in Tibetans, was associated with lower red blood cell count and lower hemoglobin levels in Tibetans. That variation occurred near a gene called EPAS1, which earlier studies suggest is involved in regulating hemoglobin in the blood as a response to oxygen levels. The mutation may be in a transcription factor that regulates the activity of EPAS1.

Reference

1. Yi X, Liang Y, Huerta-Sanchez E *et al.* (2010). Sequencing of 50 Human Exomes Reveals Adaptation to High Altitude. *Science*, 2 July 2010: Vol. 329. no. 5987, pp. 75 - 78 DOI: [10.1126/science.1190371](https://doi.org/10.1126/science.1190371)



GENERAL CONFERENCE

The 13th MIPOGRASS General Conference was successfully held on 20 August 2010 (Friday) at I&PR Auditorium, Aizawl. New leaders for 2010-2012 were elected under the guidance of MJA. Dr. Lalnundanga, Associate Professor & Dy. Director of Academic staff College, Mizoram University, presented his paper on the topic "*Impact of Climate Change on Biodiversity*". *Certificate of Appreciation* were handed over to one member Dr. Liansanga Pachuau for his Ph.D. award and Dr. Lalramliana, Dr. H. Lalthanzara, H.T. Lalremsanga and Saipari Sailo for their description of new species.

The newly elected leaders for 2010-2012 are:

<i>President:</i>	Dr. H. Lalthanzara
<i>Vice President:</i>	Dr. R. Lalfakzuala
<i>General Secretary:</i>	Dr. H. Lalruatsanga
<i>Asst. Gen. Secretary:</i>	Dr. K. Lalchhandama
<i>Treasurer:</i>	Dr. Rosy Lalnunsangi
<i>Finance Secretary:</i>	Dr. Lalnuntluanga

The OB meeting appoints the followings as executive members:

Secretary i/c

<i>Information & Publicity:</i>	Vanlalromuana
<i>Science Education:</i>	Dr. Zodinpuia Pachuau
<i>Project:</i>	John Zothanzama Sailo
<i>Seminar & Symposium:</i>	R. Lalramengzami
<i>Coaching:</i>	L.P. Lalduhawma

Committee members

1. Dr. F. Lalnunmawia
2. Lalrinmawia
3. Rosangliana
4. Dr. Zaithanzauva Pachuau
5. Dr. B. Zoliana
6. Dr. Lalrokima Chenkual
7. Lalramnghaki Pachuau
8. Dr. P.C. Vanlalhluna
9. Lalchawimawii

10. Aldrin Malsawmtluanga
11. Thanhmingliana
12. Lalsangluaii Fanai
13. Nuchhungi Khawlhing
14. Esther Lalhmingliani
15. Lalingura
16. Dr. Lalliansanga Pachuau
17. Lalbiakmawia
18. Lalrinthara Pachuau
19. Emanuel Lalkhumtira
20. Saipari Sailo
21. J. Malsawma

Advisers

1. Dr. Vanlalzara
2. Lalram Thanga IFS
3. Prof. H. Lalramnghinglova
4. Dr. R.K. Lallianthanga
5. Ramhluna Hnamte
6. Dr. Tawnenga
7. C. Lalzarliana

NET (JRF)

C. Vanlalveni, Dept. of Botany, has recently got through CSIR-UGC National Eligibility Test and she is awarded JRF. She appeared NET exam in June 2010 at Guwahati.

NET CENTRE

MIPOGRASS has for the 5th time submitted application for CSIR-UGC NET exam centre at Aizawl to the President of India Mrs Pratibha Patil, who had came for Mizoram University Convocation on 24 September 2010.

SCIENCE VISION EDITORIAL BOARD

A new editorial board was set up for 2010-2012. The board has been substantially strengthened in view of broader dissemination. They will take charge from the next issue, i.e., October-December issue. Members and reader are requested to visit our site <http://sciencevision.info>

SENSITIZATION WORKSHOP

A *One Day State Level Sensitization Workshop on Biodiversity* is scheduled to be held on 21 October (Thursday) 2010 at Chanmari YMA Hall. The programme is organised by MIPOGRASS in collaboration with Mizoram Biodiversity Board.

Tentative programs are as follows:

Registration 9:30-10:00
Inaugural session 10:00 - 11:00
Chairman: PCCF, Mizoram
Welcome address: Chairman
Keynote address: LR Thanga
Chief Wildlife Warden &
Member Secretary, MBB
Vote of thanks: Dr. H. Lalthanzara
President, MIPOGRASS

Technical Session I: 11:00 - 12:30
Chairman: LR Thanga,
Member Secretary, MBB
Presentation: *Biopiracy & Bioprospecting*
- Saipari Sailo,
MIPOGRASS

*Biodiversity Act & Wildlife
Protection Act*
- Liankima, IFS

Lunch (12:30-01:00)

Technical Session II: 01:00 - 4:00
Chairman: Liankima, IFS
Presentation: *Floral Diversity - Management and Conservation*
- Dr. Lalnundanga,
MIPOGRASS

Faunal Diversity - Management and Conservation
- HT Lalremsanga,
MIPOGRASS

Guidelines for Wildlife Research
- Laltlanthanga, E&F

SEMINAR

Seminar on Gender Equity for Prosperity with Peace is going to be jointly organised by Mizoram Council of Science, Technology and Environment, Govt. of Mizoram, and MIPOGRASS in the month of November 2010. Detail programmes are being prepared and information may be notified soon.