

Modern freshwater stromatolites and their algal mats in surface calcareous tufa in Sichuan and Guizhou Areas

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Based on the systematic surveys and laboratory research of the surface calcareous tufa in Jiuzhaigou of Sichuan, and Huangguoshu, Malinghe gorge and Xiangzhigou of Guizhou, it is first found that there are modern freshwater stromatolites and their algal mats in surface calcareous tufas. A lot of bibliographies are looked up and reviewed in order to identify some calcareous tufas with stromatolites in the paper. All the stromatolitic algal mats in research areas are summarized according to their varieties and features. It is considered that dominant species of microbiocoenosis in these stromatolite algal mats are mainly *Schizothrix* □ *Phormidium* and *Lyngbya* belonging to cyanophyta. Formation of the freshwater calcareous tufas stromatolites result from laminated construction of cyanophyta mats and periodic calcareous deposition. Layers and other morphology of the stromatolites are related to species of cyanophyta and the living environment of stromatolites. Research on these modern freshwater stromatolites and their algal mats in surface calcareous tufas are considered to be important to the study of sedimentology, geomicroorganism, stromatolites and their mineralization, karst geomorphology and hydrology and climate.

References

- Tian, Y. P., He, F. S., 2000. A discussion on genetic processes of tufa landscape as tour resources, *Scientia Geographica Sinica* (in Chinese) 20(5): 456-461
- Tian, Y. P., He, F. S., 1996. A preliminary study on micro-community ecology of karst cyanophyta in mat from Fengdong cave, Panxian, Guizhou, *Carsologica Sinica* (in Chinese), 15(3): 233-237.
- Tian, Y. P., He, F. S., 1998. A study on biogenetic of calcareous tufa, *Carsologica Sinica* (in Chinese) 17(1): 49-55.
- Tian, Y. P., He, F. S., 1997. Research on waterfall calcareous tufa mats from Xiangzhigou, Guizhou, *Carsologica Sinica* (in Chinese) 16(2): 145-154.
- Walter M R. Introduction. In □ Walter M R ed. *Stromatolites*. Amsterdam: Elsevier, 1976.1~3.
- Wang Z. Q. □ Quan Q. Q. 1982. Modern stromatolites in eastern part of the Yangtse Gorges, Yichang. *Scientia Geologica*, 10: 403-406.
- Zhang J. 1992. Observation on algal effects on subaerial karst sedimentation. *Geographical Research*, 11(2): 26-33.
- Zhang J. 1993. On bio-effects on the development of karse dammed lakes in limestone areas, Minshan mountain range, NW Sichuan. *Journal of Lake Sciences*, 5/1:32-39.
- Zhu S. X. 1993. *Stromatolites in Chian*. Tianjin, Chian, Tianjin University Press, 139-140.