A Big Earth Data Platform for Three Poles

**Pollen spectra of Lake Xingxinghai covering the last 7400 years, Yellow River Source Area**

1、Description

A 170-cm-long sediment core was extracted from Lake Xingxinghai at a water depth of 9 m (34°50.44′N, 98°06.34′E) in January 2010 using Austria’s UWITEC platform coring equipment. Both the 210Pb/137Cs and AMS 14C (11 dating data) approaches were applicated into the age-depth model establishment using Bayesian age–depth modelling by the “Bacon” software, and the age-depth model indicates the core covers the past 7400 years. The core was sliced at 0.5-cm interval upper 3 cm and 1-cm interval for other part, finally we got 173 samples totally. Pollen grains were extracted using a procedure including the treatments with 10 % HCl, 10 % NaOH and 40 % HF, followed by a 7-μm mesh sieving and acetolysis treatment (9:1 mixture of acetic anhydride and sulfuric acid). Pollen grains were identified and counted under optical microscope, and at least 300 terrestrial pollen grains were counted for each sample. The mean temporal resolution of pollen spectra is ca. 40 year/sample.  
The pollen spectra include forty-eight pollen taxa, are dominated by herbaceous taxa (range: 88.5~98.9%; mean: 93.4%), such as Artemisia (up to 54.4%), Cyperaceae (up to 50.1%), Poaceae (up to 48.8%), Chenopodiaceae (up to 17.9%) and Asteraceae (up to 8.5%). Abundance of arboreal pollen is less than 5% through out the core, mainly comprised of Pinus (maximum: 4.9%; mean:1.2%) and Betula (maximum: 3.0%; mean: 0.7%). The pollen dataset includes pollen percentages for the 43 terrestrial pollen taxa together with their depths and ages, and the dataset is valuable to employed in past vegetation and climate reconstructions.

2、Keywords

Theme：Pollen,Paleoclimate Reconstruction  
Discipline：Palaeoenvironment  
Places：Tibetan Plateau, Yellow River Source Area  
Time：Holocene

3、Data details

1.Scale：None

2.Projection：None

3.Filesize：0.048MB

4.Data format：None

4、Space scope

|  |  |  |
| --- | --- | --- |
| - | north：34.0 | - |
| west：98.0 | - | east：98.0 |
| - | south：34.0 | - |

5、Time frame:2021-11-17 16:00:00+00:00--2021-11-17 16:00:00+00:00

6、Reference method

References to data:

TIAN Fang, CAO Xianyong. Pollen spectra of Lake Xingxinghai covering the last 7400 years, Yellow River Source Area. A Big Earth Data Platform for Three Poles, doi:10.11888/Paleoenv.tpdc.2718282021

References to articles:

Tian, F., Qin, W., Zhang, R. Herzschuh, U., Ni, J., Zhang, C., Mischke, S., & Cao, X. (2022). Palynological evidence for the temporal stability of the plant community in the Yellow River Source Area over the last 7,400 years. Veget Hist Archaeobot. https://doi.org/10.1007/s00334-022-00870-5

7、Supporting project information

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8、Data resource provider

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