Exploration Period (1935–1953): The First Step Toward Standardization

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In 1936, Huang Jiqing published the *Problems of Colouring and Symbols of Geological Maps of China* and Nan Yanzong published *Discussion on the Usage of Igneous Rock Patterns on Geological Maps*. In 1937, Wang Bingzhang's published *Discussion on Symbols Colouring and Patterns of Geological Maps*. These made the first step toward “unification” and “standardization” in geological mapping in China.

At this stage, regional geological mapping began to have standard norms, with 1945 and 1948 Huang Jiqing et al.'s *1:3 million Geological Maps of China* and a series of *Geological Maps of China (1:1 million)* as representatives. Through the compilation of these maps, breakthrough of zero geological map in mainland China has been achieved.

A series of geological maps during this period systematically summarized and reflected the achievements of geological survey and geological research in China in the first half of the twentieth century, provided important basic geological data for the planning and deployment of geological work in the First Five-Year Plan of the state, and laid a solid foundation for the future comprehensive geological mapping. In addition to the gradual standardization of geological maps, there are many vivid, interesting, and exquisite hand-drawn drawings that show the beauty of nature from the perspective of geologists.

This is a pencil drawing by early geologists of rock mineral specimens examined under a microscope. The detail demonstrates the professionalism and rigor of the scientists (Fig. 3.1).

The map clearly and concisely depicts geologic columnar profiles of Jurassic strata in Wenquanxia, Caijiagou, and elsewhere (Fig. 3.2).

In these multi-color regional geological maps, strata and rocks are distinguished using different colors and patterns,

mostly in yellow and green. Place names are labeled, and both Chinese and English names are provided for the most important locations. The requirements of a standard geological map are generally satisfied: the map has detailed legend, frame, latitude and longitude lines, and latitudinal and longitudinal coordinates; only compass rose is missing (Fig. 3.3).

The sketch adopts a diagonal composition and depicts the geology with lines of various thicknesses and colors. The yellowed paper is rich in old-fashioned charm (Fig. 3.5).

These generously illustrated diagrams vividly depict the tools and engineering operations of fieldwork during the early period of geological exploration (Figs. 3.8, 3.9, 3.10).

Blueprint of geological map with distinct lines and complete and orderly legends and patterns (Fig. 3.11).

Using ink and watercolors, the map depicts the strata and rock formations of the Huize section prospecting projects along the Xufu-Kunming Railway, with geographic grid and scale (Fig. 3.12).

Consists of three sketches drawn using single lines, with distinct layers and clear labels (Fig. 3.14).

A depiction of macroscopic geological bodies and an objective description of local geomorphology that superbly integrates geology and aesthetics (Fig. 3.16).

Ancient paper with distinct lines and colored by crayon (Fig. 3.17).

The profile consists of three small sections, with detailed, well-rendered geological features at a glance (Fig. 3.18).

The geological map is rich in content and cleanly drawn in single lines (Fig. 3.19).

From 1945 to 1948, under the leadership of Jiqing Huang, the director of the Regional Geological Research Office of the China Geological Survey, 14 sheets of geological map with standard sheet divisions on the scale of 1:1,000,000 were compiled. The map compilation systematically summarizes and depicts the achievements of the national geological survey in 1948 and represents the first

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Fig. 3.1 Microscopic diagram of pyrite from Mt. Liuhuan, Yingde, Guangdong Province [1]

national geological map of mainland China. The depicted sheet is bilingual (Chinese and English) with bright colors and was published based on a print from a fair drawing (Fig. 3.21).

A depiction of macroscopic geological bodies and an objective description of local geomorphology are integrated by the sketch artist. With its small number of strokes, the geological map has the appeal of a landscape painting (Fig. 3.22).

The combination of clear, smooth single lines and coloring makes the map appealing and orderly. The map is in double-line frame, with latitudinal and longitudinal coordinates (Fig. 3.24).

These diagrams are drawn in crayon, mainly red and green. The clean lines objectively portray the local geomorphology while giving consideration to the art of sketching. The viewers feel as if they are in the midst of mountains rising on both sides (Fig. 3.25).

Fig. 3.2 Geologic column section of Jurassic stratum [2]

Fig. 3.4 Structure map of Mugui manganese mine [4]

Fig. 3.6 Geological map of the phosphate mining area in village Zhongyi, Kunyang, Yunnan Province [6]

Fig. 3.7 Illustrations attached to special report on copper mines in Zhushan, Hubei Province [7]

Fig. 3.8 Diagrams of tool and operations (1) [8]. Source: Diagram of tool and operations (set of three-piece)

Fig. 3.9 Diagrams of tool and operations (2) [9]. Source: Diagram of tool and operations (set of three-piece)

Fig. 3.10 Diagrams of tool and operations (3) [10]. Source: Diagram of tool and operations (set of three-piece)

Fig. 3.12 Geological map of Huize [12]

Fig. 3.13 Geological profile of Liujiachong coalfield in Lingling [13]

Fig. 3.14 Sketches of the operating mineshafts in Mt. Etou (set of three piece) [14]

Fig. 3.15 Geological map of coalfields in the vicinity of Duyun, Guizhou Province [15]

Fig. 3.16 Syncline sketch of Mt. Liaogao [16]

Fig. 3.17 Geological map of Jurassic coalfield in Puxin and Jiayu counties, Hubei Province [17]

Fig. 3.18 Profile of coalfield in Baoan Township, Daye, Hubei Province [18]

Fig. 3.19 Geological map of coalfields in the vicinity of Shihuiyao, Daye, Hubei Province [19]

Fig. 3.21 China geological map (Beijing sheet) [21]

Fig. 3.22 Cliff formed from a fault after loessification in Huaiyugou [22]

Fig. 3.23 Illustrations attached to geological survey report of deposits in the vicinities of Xuanhua, Zhuolu, and Yuxian [23]

Fig. 3.25 Multiple diagrams of even faults at Mt. Guanyin [25]

Fig. 3.26 Geological profile of the vicinity of Mt. Tieshan, Daye, Hubei Province [26]

Fig. 3.27 The fourth layer sketch maps attached to report of geological exploration at Taolin, Hunan Province (sheet 1) [27]

Fig. 3.28 The fourth layer sketch maps attached to report of geological exploration at Taolin, Hunan Province (sheet 2) [28]

Fig. 3.30 Geological maps (profiles) of igneous rock and geological formations in the Zhaitang coalfield (Part IV) [30]

Fig. 3.31 Block-diagram of Panjiachong lead-zinc mine veins (sheeted zone) in Liling, Hunan Province [31]

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