

## BOOK REVIEWS

THE STORY OF JADE. By the late Herbert P. Whitlock and Martin L. Ehrmann, pp. 222, 179 black illustrations and six full colored plates, 8"×11 $\frac{1}{4}$ ", Sheridan House, New York, 1949. Price \$12.50.

*The Story of Jade* is a very impressive volume. It contains a wealth of authoritative information concerning the occurrence and the various properties of jade, methods of carving, as well as the meanings of shapes and symbols of ancient jade. It has many beautiful illustrations in black and white and full colors. The book is well planned and excellently printed. It is a prize volume.

The authors are jade experts. The senior author, the late Herbert P. Whitlock was for twenty-three years curator of mineralogy at the American Museum of Natural History and after retirement in 1941, he became curator emeritus and research associate in jade. Mr. Whitlock was an ardent collector of jade and many of the illustrations are of objects from his extensive private collection. He spent many years in preparing the manuscript which was completed shortly before his death in 1948. Arrangements for the publication of this significant contribution on jade were made by the junior author, Mr. Martin L. Ehrmann, who has had wide experience as a dealer in minerals and is a competent connoisseur of jade.

The comprehensiveness of the text is indicated by the chapter headings, which are: Jade: The Many Colored Jewel of Heaven; The Jade of Ancient China; Dragons, Phoenixes and Other Creatures; Taoist Symbols; Gods and Immortals; How Buddhism Influenced Chinese Carved Jade; Salutations and Inscriptions; Bowls, Cups and Other Containers; Beads, Buckles and Other Articles of Adornment; and Various Objects Carved from Jade.

The very readable text is amplified by numerous illustrations of superbly carved objects from the Drummond, Cockcroft, Morgan, and Whitlock jade collections. The beautiful designs and the exquisite carvings reveal the marvelous artistry and skill of the Chinese worker in jade.

*The Story of Jade* is a "must" for all libraries. Mineralogists and mineral dealers, as well as collectors and lovers of gems, will find the book very stimulating and extremely helpful.

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## PROSPECTORS' MANUALS FOR RADIOACTIVE MINERAL DEPOSITS

Within the last two years, three governments have issued handbooks to aid the prospector in his search for deposits of radioactive materials. These guides are of interest to both amateur and professional geologists and mineralogists, for they contain not only summary descriptions of the chief radioactive minerals and the deposits in which they occur but also instructions for use of Geiger counters and other detection methods as well as statements of official prices and control regulations.

The Canadian booklet, *Prospectors' Guide for Uranium and Thorium Minerals in Canada*, was written by Hugh S. Spence and F. N. Senftle and is issued by the Bureau of Mines, Department of Mines and Resources, Ottawa, Canada, from whom it may be obtained (no cost is indicated). The chief topics discussed are uranium and thorium minerals, aids in identifying them, their mode of occurrence, and their determination by radioactive methods. Two appendices treat the use and care of the Geiger counter and examination of samples by the Department of Mines and Resources. A third presents an extract from the regulations affecting prospecting for radioactive materials in Canada.

The Department of Scientific and Industrial Research of the Geological Survey of

Great Britain has published *A Prospectors Handbook to Radioactive Mineral Deposits*, which may be obtained from the Department for sixpence (about 15 cents) at Rex House, 4-12 Regent Street, London, S.W.1. Because of the heavy British investment in atomic energy installations, the Ministry of Supply has guaranteed to purchase all high-grade uranium ore produced in the Colonial Empire during the next ten years at a minimum price of £1,540 per long ton of contained uranium oxide (13s. 9d per pound). Grants toward the construction of extraction plants and development of mines also may be made. The Atomic Energy Division of the Geological Survey is prepared to examine and assay samples of uranium ore.

After a series of descriptions of the more abundant radioactive minerals, the handbook summarizes the geology of various types of uranium and thorium deposits and lists worldwide examples. Next follow accounts of the main detection methods (Geiger counter, fluorescence, photography, etc.) and an announcement of the purchasing and aid program of the Ministry of Supply. A short glossary of pertinent geologic words and phrases concludes the work.

In the United States the Atomic Energy Commission and the Geological Survey have prepared a 123-page, pocket-sized booklet entitled, *Prospecting for Uranium*, which may be purchased for 30¢ from the U. S. Government Printing Office, Washington 25, D. C. Orders of 100 or more copies receive a 25% discount. The seven chapters are:

1. The uranium-bearing minerals.
2. Where to look for uranium
3. Testing for uranium
4. Prospecting with the Geiger counter
5. Laboratory assays and selling procedures
6. Laws and regulations
7. Questions frequently asked

In Chapter one, Tables one and two summarize the properties of 20 uranium and thorium minerals listed under the color headings, black, brown, yellow, and green. Uranium detecting methods and devices recommended in Chapter 3 are the fluorescent bead test with LiF or NaF, photographic, scintillation and electroscope tests, and the comparison test by means of a Geiger counter and a sample of known uranium content.

The Atomic Energy Act provides that all uranium and thorium on public lands that were vacant and unappropriated as of August 1, 1946, is reserved "for the use of the United States." This does not prevent prospectors from staking a valid claim on newly found radioactive mineral deposits. However, the Atomic Energy Commission has the right of entry to the claim and the right of removal of the uranium or thorium *without compensation for either metal*. This is to be construed as an emergency provision only, and normally the Commission follows the policy of acquiring ores and concentrates through ordinary commercial methods. Until April 11, 1958, a guaranteed minimum price of \$3.50 per pound of  $U_3O_8$  in domestic ores or concentrates assaying at least 10%  $U_3O_8$  has been established. The Commission will also pay a bonus of \$10,000, until the same date, for the discovery of a new deposit and the production from it of the first 20 short tons of uranium ore or concentrate assaying 20% or more  $U_3O_8$ . *Neither this price nor the bonus will be permitted to apply to the carnotite or roscoelite type of ore*, the purchase of which is governed by a series of labyrinthian schedules printed in full in Appendix 3. Licenses issued by the Commission are required to transfer, deliver, receive, or export radioactive ore after its removal from the deposit.

Licensing legalisms, regulatory ramifications, and pricing procedures, which consume some 40-odd pages or about one-third of the volume, are couched in the usual stupefying governmental jargon, destined no doubt, to discourage the average prospector.

The most valuable part of the book to prospectors will probably be Chapter 7, which answers, in clear, non-technical language 17 basic questions that beginners are likely to ask.

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## NEW MINERAL NAMES

## Cymrite

W. CAMPBELL SMITH, F. A. BANNISTER AND MAX H. HEY, Cymrite, a new barium mineral from the Benallt manganese mine, Rhiw, Carnarvonshire: *Mineral. Mag.*, **28**, 676-681 (1949).

CHEMICAL PROPERTIES: Analyses were made by Hey, No. 1 below on 7 mg., almost free from impurities; No. 2 on 20 mg. that contained some reddish-brown oxide minerals. No. 3 is the theoretical composition for  $\text{BaAlSi}_3\text{O}_8(\text{OH})$ .

|    | $\text{SiO}_2$ | $\text{Al}_2\text{O}_3$ | $\text{BaO}$ | $\text{H}_2\text{O}$ | $\text{Fe}_2\text{O}_3$ | $\text{MnO}$ | Sum    |
|----|----------------|-------------------------|--------------|----------------------|-------------------------|--------------|--------|
| 1. | 44.8           | 10.5                    | [38.5]       | 3.1                  | 2.8                     | 0.3          | [100]  |
| 2. | 37.65          | 14.94                   | 31.50        | 5.31                 | 9.26                    | 0.86         | 99.52  |
| 3. | 45.79          | 12.95                   | 38.97        | 2.29                 | —                       | —            | 100.00 |

Heated in a closed tube, the mineral decrepitates, gives off water, and becomes pearly, white, and opaque.

CRYSTALLOGRAPHY: Rotation and Laue photographs show the mineral to be hexagonal. There is a pseudo-cell with  $a' 5.33$ ,  $c 7.67 \text{ \AA.U.}$ , containing  $\text{Ba}_2\text{AlSi}_3\text{O}_8(\text{OH})$ ; the true cell has  $a=8a'=42.6 \text{ \AA.U.}$  Cleavage basal, perfect. Prismatic cleavage noted in thin section. Flakes heated to bright redness had  $a 5.29$ ,  $c 7.78 \text{ \AA.U.}$ , but the index of refraction had dropped to 1.523. X-ray powder data are given.

PHYSICAL AND OPTICAL PROPERTIES: Colorless, in plates up to 7 mm. across and about  $\frac{1}{2}$  mm. thick. Also in fibrous specimens with satiny luster. Optically uniaxial, negative; two samples gave (Na light):

|    | $\omega$          | $\epsilon$        | Birefringence       |
|----|-------------------|-------------------|---------------------|
| 1. | $1.6225 \pm .001$ | $1.6125 \pm .001$ | $0.0094 \pm .0004$  |
| 2. | 1.6195            | 1.6115 to 1.6140  | 0.008 (white light) |

For No. 2,  $\omega$  (Hg-green) 1.624

$D_{20}^{25} 3.413 \pm .005$  by suspension in Clerici solution on four carefully selected fragments.

OCCURRENCE: Associated with ganophyllite at the Benallt mine.

NAME: From the Welsh name for Wales, Cymru (pronounced kumry).

MICHAEL FLEISCHER

## Llallagualite

MARK C. BANDY, Mineralogia de Llallagua, Bolivia. La Paz, 1946, 69 pp.; through *Mineral. Mag.*, **28**, 732 (1949).

Provisional name for rhombohedral phosphate, which has perhaps the composition of monazite, named for the locality.

M. F.

## Patifioite

M. C. BANDY, *op. cit.*; through *Mineral. Mag.*, **28**, 735 (1949).

"Provisional name for yellow tetragonal crystals, probably a phosphate or arsenate.