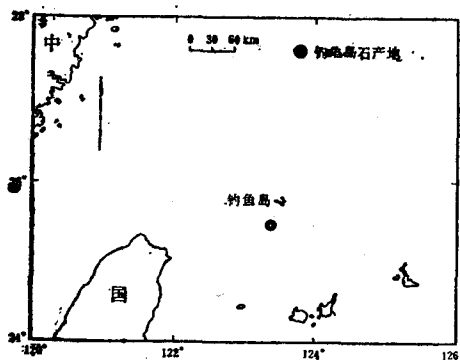


一种新矿物——钓鱼岛石的发现

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1982, 年中国科学院海洋研究所在东海海域进行了海底沉积物的调查;之后,对所取沉积物样品开展了多方面的研究工作,其中在表层碎屑矿物的研究中发现了一种新矿物。它产在东海东部的冲绳海槽南端,即中国台湾省东北50公里处的钓鱼岛附近(123°22'E, 25°26'N)的海底表层沉积物中(见图)。它是在自然界中首次发现的一种新矿物,根据其产地命名为钓鱼岛石(Diaoyudaoite)。该矿物于1985年11月经国际矿物学会(IMA)新矿物及矿物命名委员会通过。它的发现对于冲绳海槽



钓鱼岛石产地示意图

Fig. Schematic Location map of Diaoyudaoite

地区的火山活动、岩浆性质、以及环太平洋构造带玄武岩(即有关拉斑玄武岩,高铝玄武岩和碱性玄武岩)长期以来分带性的讨论,将起到积极的作用。

钓鱼岛石为无色—淡绿色、透明矿物。结晶习性为薄板状,晶体通常很小,最大者为0.5×0.3毫米(长×宽),一般小于0.4×0.2毫米、厚0.02—0.04毫米。一轴晶负光性,折光率 $n_o = 1.6876$ $n_e = 1.6630$,莫氏硬度为7.6级,实测比重为3.3(计算值为3.21)。

该矿物的化学成分为 Na_2O 4.54, Al_2O_3 93.00, Cr_2O_3 1.95, MgO 0.1, CaO 0.1, SiO_2 0.23, K_2O 0.12, 总合100.04。化学式为 $(Na_{0.87} K_{0.02} Mg_{0.02} Ca_{0.01})_{0.92} (Al_{10.84} Cr_{0.15} Si_{0.02})_{11.01} O_{17}$ 。

该矿物为六方晶系,晶胞参数为 $a = b = 5.602\text{\AA}$, $c = 22.626\text{\AA}$, $\alpha = \beta = 90^\circ$, $\gamma = 120^\circ$,单胞体积为 614.89\AA^3 ,空间群为 $P6_3/mmc$, $Z = 2$ 。其X光粉晶主要强线: 11.2(10)(002), 2.68(7)(017), 5.65(6)(004), 2.505(5)(114), 2.246(3)(116), 2.028(4)(026), 1.413(4)(0213), 1.400(6)(220)。

A STUDY ON DIAOYUDAOITE—A NEW MINERAL

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Abstract

Diaoyudaoite was discovered in 1982 as a new mineral in surface sediments on the sea

floor of southern part of Okinawa Trough northeast of Taiwan province of China about 150 km, near the Diao Yu Dao (Island) ($123^{\circ}22'E$, $25^{\circ}26'N$). Diaoyudaoite is named after its occurrence locality.

Diaoyudaoite is colorless-light green and usually thin, tabular in shape with a grain size of $0.4 \times 0.2 \times 0.03$ mm, specific gravity $D_{obs} = 3.30$, Moh's hardness = 7.6. The mineral is uniaxial crystal (-), $N_{\omega} = 1.6876$, $N_e = 1.6630$. The chemical formula has been calculated on basis of 17 (O) as $(Na_{0.87}K_{0.02}Mg_{0.02}Ca_{0.01})_{0.92}(Al_{10.84}Cr_{0.15}Si_{0.02})_{11.01}O_{17}$.

The mineral is of a hexagonal, with $a = b = 5.602 \text{ \AA}$, $c = 22.626 \text{ \AA}$, $\alpha = \beta = 90^{\circ}$, $\gamma = 120^{\circ}$, $Z = 2$, $V = 614.89 \text{ \AA}^3$, space group: $P6_3/mmc$. The X-ray powder diffraction data are $11.2(10)$ (002), $2.68(7)$ (017), $5.65(6)$ (004), $2.505(5)$ (114), $2.246(3)$ (116), $2.028(4)$ (026), $1.413(4)$ (0213) $1.400(6)$ (220).