

Crystal Data: Cubic. *Point Group:* 23. In veinlets and massive aggregates, to 2 mm, replacing laurite and iridisite.

Physical Properties: *Tenacity:* Brittle. Hardness = 3.7 VHN = 140–185, 165 average (20 g load). D(meas.) = n.d. D(calc.) = 11.96

Optical Properties: Opaque. *Color:* Steel-black; in reflected light, bright white with a yellowish tint. *Streak:* Black. *Luster:* Metallic.

R: (400) 41.3, (420) 45.2, (440) 45.5, (460) 46.0, (480) 46.4, (500) 46.6, (520) 46.9, (540) 47.1, (560) 47.3, (580) 47.6, (600) 47.7, (620) 47.7, (640) 47.6, (660) 47.4, (680) 47.3, (700) 47.3

Cell Data: *Space Group:* $P2_13$. $a = 6.164(3)$ $Z = 4$

X-ray Powder Pattern: Luanhe River, China.

1.860 (100), 2.75 (70), 2.51 (60), 1.090 (50), 1.027 (50), 1.647 (40), 1.345 (40)

Chemistry:

	(1)	(2)
Ir	41.2	44.37
Pt	2.8	
Cu	0.3	
Te	0.4	
Bi	47.2	48.23
S	7.2	7.40
Total	99.1	100.00

(1) Luanhe River, China; by electron microprobe, average of seven analyses; corresponds to $(\text{Ir}_{0.94}\text{Pt}_{0.06}\text{Cu}_{0.02})_{\Sigma=1.02}\text{Bi}_{0.99}(\text{S}_{0.98}\text{Te}_{0.01})_{\Sigma=0.99}$. (2) IrBiS.

Occurrence: Of hydrothermal origin in chromite bodies in dunites and placers derived therefrom.

Association: Iridium, ferrian platinum, laurite, sperrylite, cooperite, irarsite, shuangfenite, mayingite, chromite, gold.

Distribution: From a branch of the Luanhe River, 14 km west of Chengde City, Hubei Province, China [TL].

Name: From the Chinese word for the Great Wall, situated nearby the occurrence.

Type Material: National Geological Museum, Beijing, China.

References: (1) Yu Zuxiang (1997) Changchenite – a new iridium bismuth-sulfide from the Yanshan Mountains. *Acta Geol. Sinica*, 71(4), 336–339 (in Chinese with English abs.). (2) (1998) *Amer. Mineral.*, 83, 907 (abs. ref. 1).