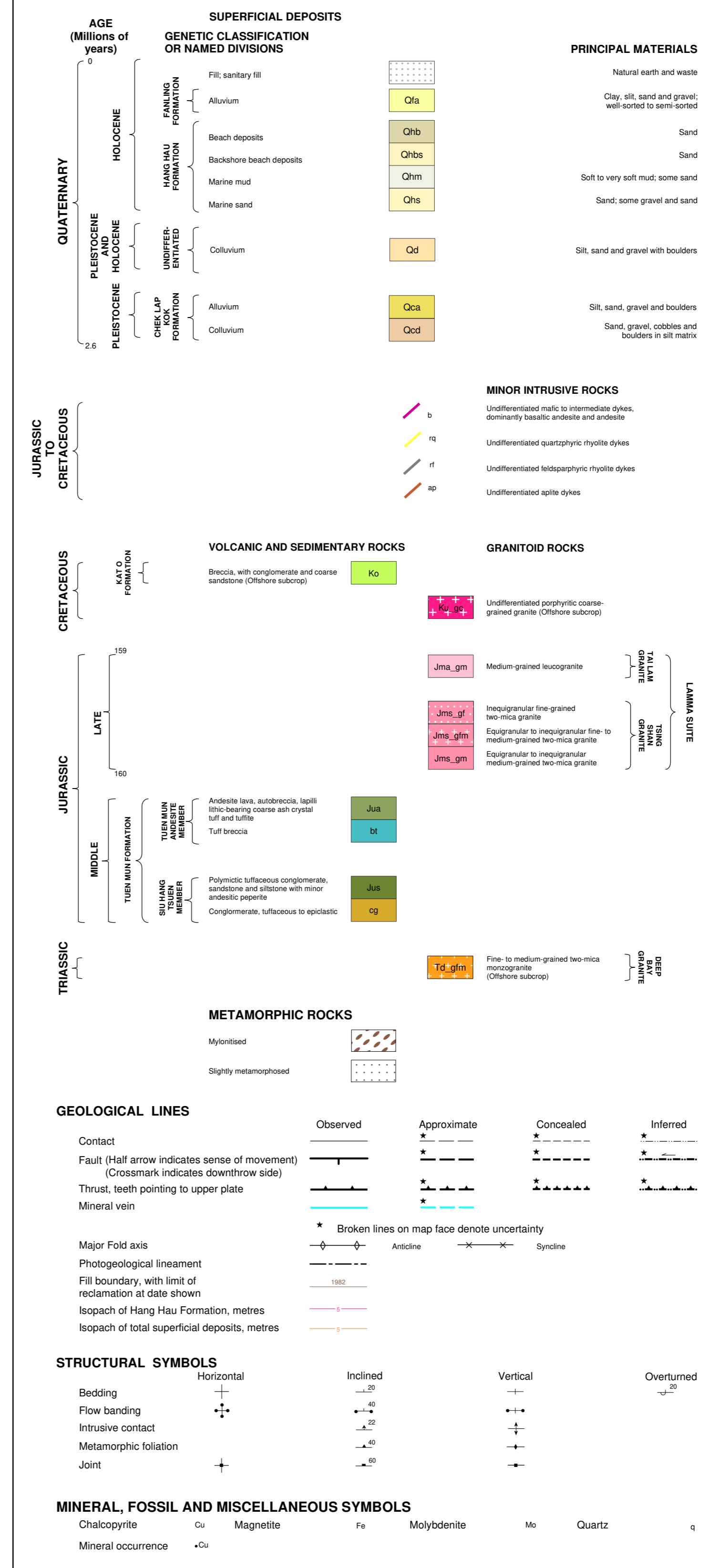
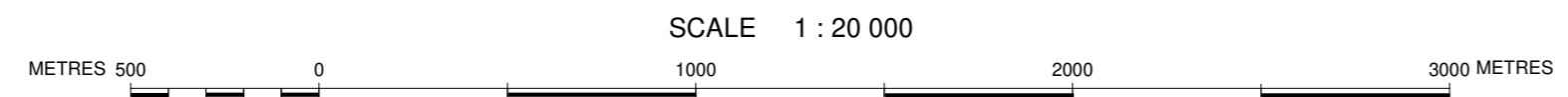
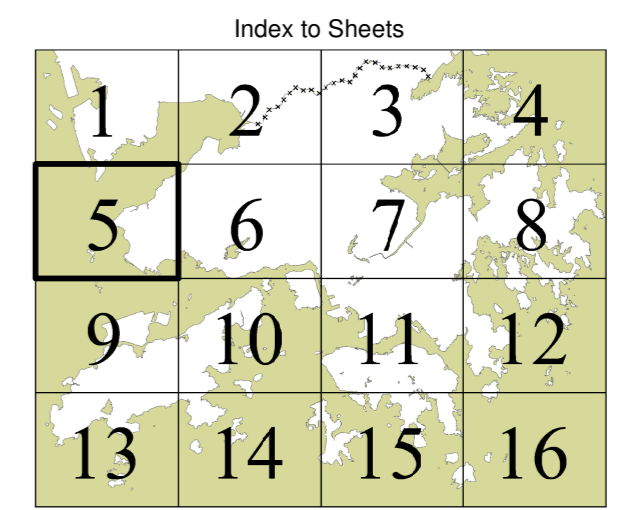


HONG KONG GEOLOGICAL SURVEY
TSING SHAN (CASTLE PEAK)
Sheet 5
SOLID AND SUPERFICIAL GEOLOGY
 Series HGM20
 Scale 1:20 000



Original geological survey by R.S. Arthurton and K.W. Lai in 1964-1966. Original offshore geology by R. Shaw and R.S. Arthurton in 1966-1967. Updated and new geological interpretation by R.W.Y. Lau and K.W.F. So (shore and offshore superficial geology), and N.M.C. Yim, T.K. Tse and D.L.K. Tang (solid geology) in 2012-2022. Base map by Survey and Mapping Office, Lands Department, Digital Bathymetry by Hydrographic Office, Marine Department. Published by Geotechnical Engineering Office, Civil Engineering and Development Department, Hong Kong Special Administrative Region, China.
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Sheet 5
 Series HGM20
 Edition II - 2023
GEOTECHNICAL
ENGINEERING OFFICE
 Geological explanatory notes, base map reference and geological cross-sections printed on reverse side



GEOLOGICAL EXPLANATORY NOTES

The solid geology of the district is dominated by Mesozoic granite intrusions, Mesozoic lavas, tufts and subordinate volcanic breccias of the Middle Jurassic Tuen Mun Formation outcrop in the east of the district. Small isolated outcrops of Cretaceous redbeds of the Kai O Formation are present in Deep Bay.

The Late Jurassic Tang Shan Granite crops out in the Tang Shan range and is the major intrusive unit in the district. The granite varies considerably in grain size from fine to the coarse medium in the west. The medium-grained variety is porphyritic in part and is the earliest intrusion, having been intruded and recrystallized by the finer variety, which is characterized by the mix xenocrysts from the earlier intrusions. The granite is cut by crystalline dykes of quartzitic and felsic syenitic, mylonitic, calcic andesite and gabbro of similar age. In Deep Bay, the Triassic Deep Bay Granite, comprising weakly-deformed, fine- to medium-grained perthite megacrysts, and an undifferentiated porphyritic coarse-grained granite, are present as outcrops to the west of the Deep Bay Fault.

The Middle Jurassic Tuen Mun Formation comprises dominantly andesite lavas and crystal tufts with subordinate volcanic breccias (the Tuen Mun Andesite member), and reinterbedded volcanoclastic sandstones and siltstones, with subordinate tufts and conglomerates (the Du Hang Tsuen member) in the district. These rocks form the smooth rounded hills that form the flanks of Tang Shan and are underlain much of the Tuen Mun Valley. The formation has a sheared, intrusive contact with the granite.

In Deep Bay, the post-volcanic Cretaceous Kai O Formation is present as small isolated outcrops. The unit comprises blocky bedded, reddish purple, granite clast-bearing taceous, conglomerate and coarse sandstone. The Kai O Formation is inferred to overlie unconformably on the Mesozoic granites in the offshore areas.

The structure of the district is dominated by northeast-trending shearing associated with the dynamic metamorphism. Shearing within the granite has formed narrow zones of mylonite, but within the outcrops of volcanic rocks, sheared zones are broader and less sharply defined. Many of the felsic and mafic dykes and quartz veins within the granite follow this same structural trend. The metamorphism is of low grade greenschist facies, and metamorphic mineral assemblages are best developed in the sheared volcanic rocks.

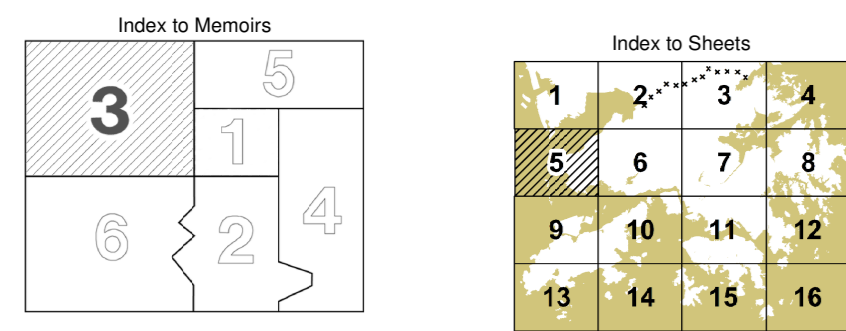
A weathered mantle covers most of the rocks of the district. The fine-grained granite is most resistant to weathering, and forms the high ridge of Tang Shan. The volcanics are deeply weathered, often more than 50 m below ground level.

Quaternary superficial deposits are ubiquitous in the offshore areas, and extensive on the lower slopes of Tang Shan, where they consist of two ages of debris flow deposit, grading downslope into alluvium. There are some sand beaches fringing the coast, which commonly extend offshore as marine sands. Coarse beaches are common. Holocene alluvium of the Farling Formation beneath Tuen Mun, which traced southwards in both directions, passes laterally into intertidal estuarine muds and ultimately into offshore muds of the Hang Hau Formation. This formation bypasses the seabed, resting on the predominantly alluvial sequence of the Pleistocene Chek Lap Kok Formation. In Deep Bay and southern part of Limousin Road, the offshore superficial deposits have been largely disturbed and dredged in former borrow areas.

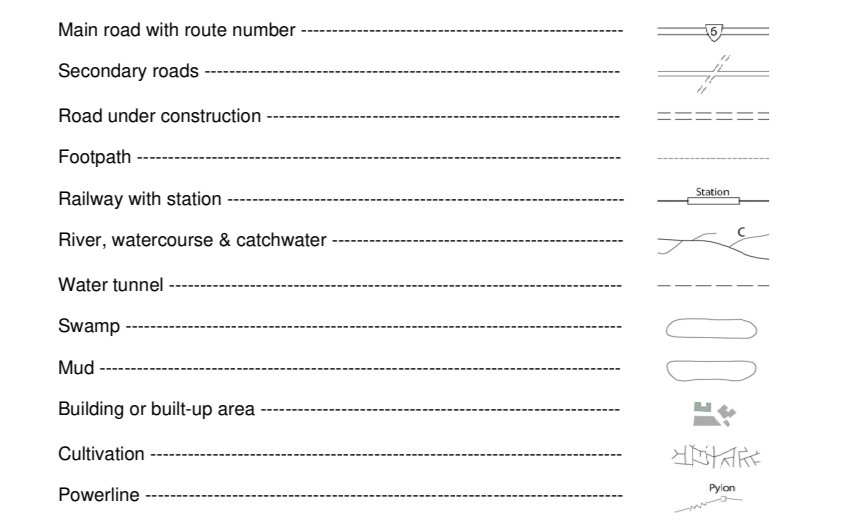
GEOLOGICAL MEMOIRS

Earlier descriptions of the geology of the areas covered by the maps in this series are published as memoirs of the Hong Kong Geological Survey. The first edition of Map Sheet 5 (1988) was described in Memoir No. 3, Geology of the Western New Territories (1989). The geology of the district is summarized in two memoirs, The Pre-Quaternary Geology of Hong Kong (2000) and The Quaternary Geology of Hong Kong (2000) that are accompanied by a series of 1:100,000 scale geological maps. An on-line version of these two memoirs is available at: http://www.cedd.gov.hk/eng/about-us/organisation/org_geo/serve/pub_info/memoirs/geology/index.html

The latest revisions to Map Sheet 5 are described in Geological Report GR 2002, 'Updating of Hong Kong Geological Survey 1:20,000 scale Maps - Major Findings and Revisions Map Sheet 5 - Tang Shan (Castle Peak)'. The published maps and memoirs are available from the online Government Bookstore <http://www.bookstore.gov.hk/> and the Geological Report is available on request from the Chief Geotechnical Engineer / Planning, GEO, CEDD.



BASE MAP REFERENCE



The base map is a monochrome version of Sheet 5, Topographic Series HM20C, published by Lands Department.
 Heights are in metres above Principal Datum, which is 1.2m below Mean Sea Level. The contour interval is 20m.
 Submarine contours, shown by 5m, 10m, 15m, 20m, 30m and 50m, are derived from the Hong Kong Electronic Navigation Charts prepared by the Hydrographic Office of the Hong Kong SAR Government.
 The Hong Kong 1980 Grid on this geological edition is shown at 100 metre spacing. For further information on the topographical and cultural elements, consult the Topographic Series HM20C.

LINES OF CROSS-SECTION

