

The following two analyses were made by Gumbel and Church from specimens obtained from members of the Expedition. Church does not mention the station from which his specimens came, but in all probability they came from Station 252 (J. M.).

106A. MANGANESE NODULES.—Station 252. Lat. 37° 52' N., long. 160° 17' W., 2740 fathoms (C. W. Gumbel, *Sitzungsber. d. bayer. Akad. d. Wiss.*, 1878, ii. pp 189–209; also *Neues Jahrb. f. Min. &c.*, 1878, p. 869).

Oxide of iron, . . . . .	27·460
Peroxide of manganese, . . . . .	23·600
Water, . . . . .	17·819
Silica, . . . . .	16·030
Alumina, . . . . .	10·210
Soda, . . . . .	2·358
Chlorine, . . . . .	0·941
Lime, . . . . .	0·920
Titanic acid, . . . . .	0·660
Sulphuric acid, . . . . .	0·484
Potash, . . . . .	0·396
Magnesia, . . . . .	0·181
Carbonic acid, . . . . .	0·047
Phosphoric acid, . . . . .	0·023
Oxide of copper, . . . . .	0·028
Oxides of nickel and cobalt, . . . . .	0·012
Barium, . . . . .	0·009
Doubtful traces of lead, antimony, boron, lithium, and iodine, . . . . .	...
Traces of organic substances, . . . . .	...
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	101·173

106B. MANGANESE NODULES.—Station 252. Lat. 37° 52' N., long. 160° 17' W., 2740 fathoms (A. H. Church, *Mineralogical Magazine*, vol. i. pp. 50–53, 1876).

Water lost <i>in vacuo</i> , . . . . .	24·55
Water retained at 100° C., but evolved at a red heat, . . . . .	10·00
Manganese dioxide, . . . . .	30·22
Ferric dioxide, . . . . .	20·02
Alumina, . . . . .	3·30
Silica, . . . . .	10·37
Chlorine, . . . . .	0·71
Mg, Ca, Cu, Na, Cl, P <sub>2</sub> O <sub>5</sub> , &c., . . . . .	0·88
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	100·00

107. MANGANESE NODULE.—Station 253. Lat. 38° 9' N., long. 156° 25' W., 3125 fathoms (Brazier).

	Loss on ignition after drying at 230° Fahr., . . . . .	12·10
	Copper, . . . . .	good trace
	Alumina, . . . . .	4·70
	Ferric oxide, . . . . .	21·20
	Calcium phosphate, . . . . .	0·45
	Manganese oxide, . . . . .	26·21
Portion soluble in Hydrochloric Acid = 73·20	} — Nickel, . . . . .	good trace
	} — Cobalt, . . . . .	trace
	Calcium sulphate, . . . . .	0·75
	Calcium carbonate, . . . . .	3·06
	Magnesium carbonate, . . . . .	0·86
	Silica, . . . . .	15·97
Portion insoluble in Hydrochloric Acid = 14·70	} — Alumina, . . . . .	1·80
	} — Ferric oxide, . . . . .	0·90
	Lime, . . . . .	0·52
	Magnesia, . . . . .	0·32
	Silica, . . . . .	11·16
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		100·00