SOME ASPECTS ON WATER QUALITY

OF

KALU GANGA AND KALA OYA
DRAINAGE BASINS

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By

DAYANTHA PRIYALAL DIAS

(B.Sc. Ceylon)

Department of Chemistry.

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ABSTRACT

Chemical analysis were made of 137 water samples collected from the two drainage basins, namely Kalu ganga and Kala oya. In addition rain water samples collected within these basins were analysed. Regional geology, climatic conditions, amount of precipitation, and aquifer characteristics are dominant factors regulating the chemical composition of ground and surface waters. Distribution patterns of P_2O_5 and Fe in waters normally indicated proven deposits of apatite and iron ore (limonite in the Kalu ganga basin) respectively.

Rain water does not notably enrich the total electrolyte content of ground and surface waters. In the Kalu ganga basin the dominant anion controlling the total electrolyte content is HCO_3^-, while in the Kala oya both HCO_3^- and Cl^- are dominant anions. Enrichment of chemical constituents upstream along the Kalu ganga is correlated to the discharge of water from lateral tributaries. Many of the properties and chemical components of water are closely correlated. The water types encountered included bicarbonate, chloride-bicarbonate, and chloride waters, while sulphate waters were absent. However Kala oya waters contained significant quantities of SO_4^{--}.

On the basis of the Sodium adsorption ratio, per cent Sodium and total Salts content, it is seen that Kalu ganga waters are of 'good' to 'excellent' quality for irrigation. However most Kala oya waters are merely of 'permissible' to 'good' irrigation quality, and a few are of 'doubtful' to 'unsuitable' quality. Based on 'International Standards for drinking water', the Kalu ganga waters are of potable quality while most of the Kala oya waters are suspect.