to rectify water logging the water table needs to be lowered down to 5 meters depth The annual availability of surface water in kharif is 1360 MCM and in rabi 1494 MCM as computed from the canal discharges To optimize use of the available water resources and to maximize crop production and return from irrigation, along with reduction of water logging, several scenarios were generated by system analysis and mathematical modelling cum simulation studies

1 Only canal water usage with no groundwater draft and with existing cropping intensity of 170% Computed shortage of water is fully met from the regeneration of canal waters But the water balance after predictive simulation shows increase in groundwater storage from 169 to 1228 MCM over a period of five years In the outflows values of evapotranspiration are found to increase showing progressive shallowing of water table

2 For conjunctive use scenario an optimization of cropping pattern was attempted for maximum use of surface water in conjunction with groundwater with 200% cropping intensity The cropping pattern in kharif season was contemplated as paddy 98% and sugarcane 2%, and the shortage of water might be met from groundwater In rabi season crop diversification was attempted through system analysis using linear programming technique

The resultant cropping intensity in various sectors in rabi was taken as Paddy 38-35%, Pulses 36-18%, Oil seeds 12-19%, vegetables 10-12%, sugarcane 2% Accordingly monthly water demand was calculated following a climatological approach With surface water use of 70% and groundwater 30% the post- monsoon water table declined from the prevailing 1 2 meters to 1 9 meters The construction of additional 17526 energised dug wells may achieve the conjunctive use objectives in the area

The study clearly shows that substantial scaling down of surface water irrigation combined with groundwater use may eliminate water logging along with increase in irrigation intensity and agricultural production through crop diversification However this may need well construction and energisation to be borne from public funding sources like surface irrigation projects

THE ORIGIN OF ALKALINE LAVAS

An interesting paper on the origin of alkaline lavas has appeared in *Science*, v 320, pp 883-884 by Yaoling Niu The author highlights the origin of alkaline lavas on the ocean island by melting of metasomatic amphibole-rich veins that form in oceanic mantle lithosphere as it ages He also suggests that such melts in the presence of CO_2 are of kimberlitic composition, which according to the author offers new perspectives on the origin of continental alkaline magma association – *Ed*

CORRIGENDUM

Readers are requested to note the change in GSI Type nos mentioned in papers "Cyclostome Bryozoa from the (Eocene) Lutetian of western Kachchh, Gujarat by Asit K Guha and K Gopalakrishna", Jour Geol Soc India, v 69, June 2007, pp 1271-1278 and "New Calloporid (Bryozoa, Cheilostomata) species from Tertiary Sequences of Western Kachchh, Gujarat by Asit K Guha and K Gopalakrishna", Jour Geol Soc India, v 70, July 2007, pp 121-130

JGSI, v 69, p 1272, col 2, 11th line from top	*Stomatopora illuesae* n sp	21262 in place of 21162
JGSI, v 69, p 1274, col 1, last line	*Voigtopora reticulata* n sp	21263 in place of 21163
JGSI, v 69, p 1275 col 1, last line	*Discoparsa lakhpatensis* n sp	21258 in place of 21158
JGSI, v 69, p 1276, col 1, first line	*Idmidronea* sp	21257 in place of 21157
JGSI, v 69, p 1276, col 1, 5th line from bottom	*Oncousoecia narediensis* n sp	21259 in place of 21159
JGSI, v 69, p 1277, col 1, first line	*'Proboscina'* sp	21261 in place of 21161
JGSI, v 69, p 1277, col 1, 12th line from bottom	*Plagioecia taylori* n sp	21260 in place of 21160
JGSI, v 70, p 122, col 2, first line	*Aplousina* sp	21264 in place of 21164
JGSI, v 70, p 123, 18th line from bottom	*Copidozoum feddeni* n sp	21265 in place of 21165
JGSI, v 70, p 123, col 2, last line	*Crassimarginatella blanfordi* n sp	21266 in place of 21166
JGSI, v 70, p 124, col 2, 21st line from top	*Crassimarginatella ukirensis* n sp	21267 in place of 21167
JGSI, v 70, p 127, col 1, 6th line from bottom	*Marginaria senguptai* n sp	21268 in place of 21168
JGSI, v 70, p 128, col 1, 8th line from top	*Planicellaria kharaiensis* n sp	21269 in place of 21169
JGSI, v 70, p 128, col 2, 13th line from top	*Planicellaria naliyaensis* n sp	21270 in place of 21170
JGSI, v 70, p 129, col 1, 19th line from top	*Reptoporina chhasraensis* n sp	21271in place of 21171

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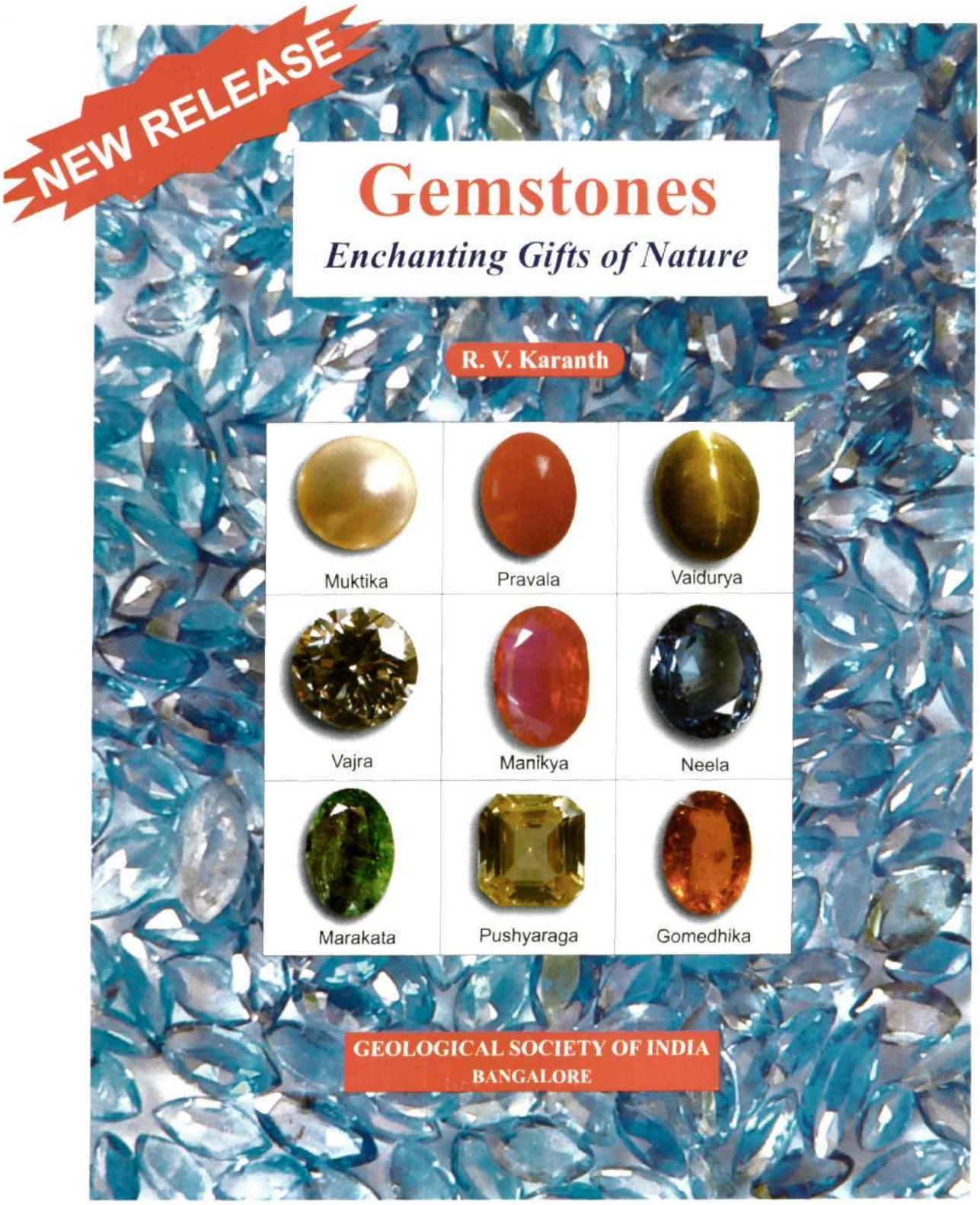

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