12 February 1988; Revised 2 May 1988

1. Moutschen, J. and Dahmen, M., *Rev. Cytol. Biol. Veg.*, 1956, **17**, 433.
2. Gillet, C., *Nature* (*London*), 1960, **187**, 874.
3. Sarma, Y. S. R. K. and Khan, M., *Nucleus*, 1967, **10**, 90.
4. Chatterjee, P. and Sharma, A. K., *J. A. P. Akad. Sci.*, 1974, **11**, 67.
5. Proctor, V. W., *J. Phycol.*, 1974, **10**, 13.
6. Pal, R., *J. Indian Bot. Soc.*, 1987 (in press).
7. Pal, R. and Chatterjee, P., *Cryptogamie Algol.*, 1986, **7**, 129.
8. Prasad, B. N. and Godward, M. B. E., *Nucleus*, 1962, **11**, 43.
9. Petrova, J., *Folia Biol.*, 1962, **9**, 51.
10. Hample, W., Altmann, H. and Biebl, R., *Radiat. Bot.*, 1971, **11**, 201.
11. Horsley, R. J., Banerjee, S. N. and Banerjee, N., *Radiat. Bot.*, 1967, **7**, 465.
12. Wells, C. V. and Hoshaw, R. W., *Environ. Exp. Bot.*, 1979, **20**, 39.
13. Baumslark-Khan, C., Schnitzler, L. and Hermann, R., *Radiant. Environ. Biophys.*, 1984, **23**, 19.
14. Godward, M. B. E., In: *Physiology and biochemistry of algae*, (ed.) R. A. Lewin, Academic Press, New York, London, 1962.

XENO-DISSIMILATORY PLASMIDS

K. BOOMINATHAN, G. GURU-JEYALAKSHMI, S. BALAJEE and A. MAHADEVAN
CAS in Botany, University of Madras, Madras 600 025, India.

MICRO-ORGANISMS play a key role in the dissimilation of natural and synthetic aromatic substances. Synthetically produced insecticides, fungicides, herbicides[1], styrene[2], nylon oligomers[3], etc. are increasingly used and bacterial plasmids have been implicated in their dissimilation. Pemberton and Fisher demonstrated that a strain of *Alcaligenes eutrophus* possessed a transmissible plasmid conferring the ability to degrade both 2,4-D and 2-methyl-4-chlorophenoxyacetic acid (MCPA), two widely used pesticides. Since then, plasmids pJP2, pJP3, pJP4, pJP5, pJP7, pJP9 from *Alcaligenes paradoxus* and *A. eutrophus* for 2,4-D dissimilation[1], pCMS1 from *Pseudomonas diminuta* for parathion dissimilation[5], pEG for styrene dissimilation[2], pOAD2 from *Flavobacterium* for nylon oligomer dissimilation[3], pUO1 from *Pseudomonas* sp., *Moraxella* and *Hyphomicrobium* sp. for fluoro-, chloro- and bromoacetate[6], chloromethane and chloroethane dissimilation, pRA500 for 3,5-xylenol from *P. putida*[7], and pTMB from *P. putida* for 1,2,4-trimethylbenzene dissimilation[8] have been reported.

Plasmids associated with the dissimilation of both natural and synthetic aromatic substances have recently been termed "dissimilatory plasmids"[9]. With the increasing number of synthetic substances, more dissimilatory plasmids await discovery. To distinguish plasmids involved in the dissimilation and detoxification of synthetic aromatic substances from those that degrade natural aromatic substances, we propose to call the former "xeno-dissimilatory plasmids". In our opinion, plasmids of this group will be more useful in understanding the functional role attributed to the plasmid.

5 March 1988

1. Pemberton, J. M., *Int. Rev. Cytol.*, 1983, **84**, 155.
2. Bestetti, G., Galli, E., Ruzzi, M., Baladacci, G., Zennaro, E. and Frontoli, L., *Plasmid*, 1984, **12**, 181.
3. Negoro, S., Shingawa, H., Nakata, A., Kinosita, S., Hatosaki, T. and Okada, H., *J. Bacteriol.*, 1980, **143**, 238.
4. Pemberton, J. M. and Fisher, P. R., *Nature* (*London*), 1977, **268**, 732.
5. Serdar, C. M., Gibson, D. T., Munnecke, D. M. and Lancaster, J. H., *Appl. Environ. Microbiol.*, 1982, **44**, 246.
6. Kawasaki, H., Tone, N. and Tonomura, T., *Agric. Biol. Chem.*, 1981, **45**, 29.
7. Hopper, D. J. and Kemp, P. D., *J. Bacteriol.*, 1980, **142**, 21.
8. Galli, E., Bestetti, G., Barbieri, P. and Baggi, G., In: *Third European Congress on Biotechnology*, Verlag Chemie, Weinheim, 1984, p. 347.
9. Balajee, S., Boominathan, K. and Mahadevan, A., *Nature* (*London*), 1986, **319**, 728.