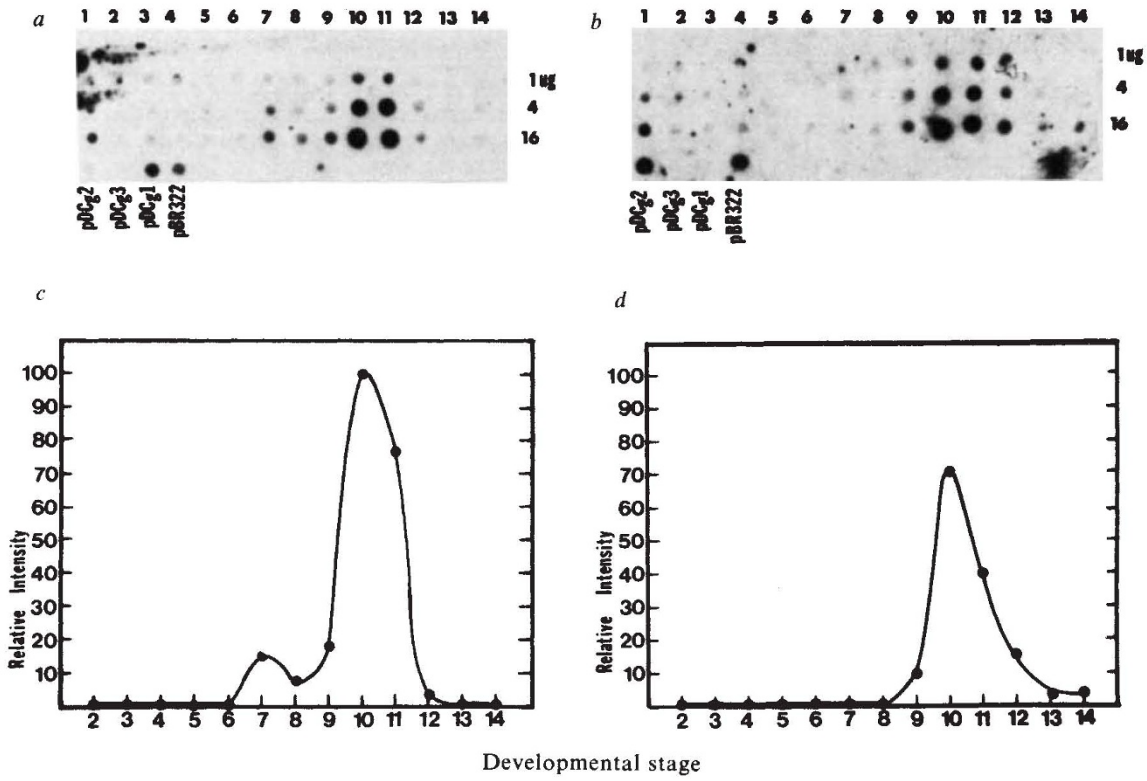

Fig. 4 Developmental mRNA profile of DCg1 and DCg2 expression. Total RNA was prepared from different *Drosophila* developmental stages[30] and immobilized on to nitrocellulose paper by loading aliquots in 20×SSC from a capillary pipette[31]. Three RNA concentrations (1, 4 and 16 µg) were used for each developmental stage. Each filter also contained control dots of the plasmids containing the *Drosophila* collagen-like sequences. Filters were hybridized by applying sufficient probe sequences to generate a local 10-fold sequence excess over the highest estimated target sequence concentration in any dot (J.E.N. and B.J.M., unpublished results). Hybridizations were done at 42 °C in 50% formamide, 5×SSC hybridization solution[26] and the filters were washed in an equivalent solution at 50 °C after 24–30 h hybridization. The figure shows autoradiographs of RNA dot blots hybridized with DCg1 (*a*) or DCg2 (*b*) sequences. *c*, *d*, The autoradiographs were quantitated using an LKB soft laser scanning densitometer. The maximum absorbance was calibrated for the most intense hybridization signal of DCg1 and other signals are expressed relative to that signal. The developmental stages represented are: 1, Kc cells; 2–9, periods during embryogenesis following oviposition by 0–2, 2–3, 3–6, 6–9, 9–12, 12–15, 15–18 and 18–21 h, respectively. 10–12, First, second and third instar larvae, respectively. 13, White prepupae. 14, Mid-pupation. An identical filter hybridized with pBR322 vector sequences showed hybridization only to control dots (data not shown).

sequences may also represent proteins containing a small, triple-helical region such as Clq[23] or acetylcholinesterase[24], although partial sequence data make this possibility unlikely for DCg1 (ref. 5). Neither pDCg1 nor pDCg2 show evidence of *in situ* hybridization to the *Drosophila* acetylcholinesterase locus at 87E1-5 (ref. 25).

Characterization of collagen genes in invertebrates such as *Drosophila* will hopefully allow genetic analysis of collagen structure and expression as well as providing insights into evolutionary relationships of vertebrate collagens.

We thank H. Boedtker for providing the chicken cDNA clones pCg45 and pCg54; J. Fristrom and T. Kornberg for allowing us to use their fly facilities for collection of embryos, larvae and pupae; and T. Maniatis for providing the *Drosophila* recombinant λ phage library used in screening. This work was supported by an NIH training grant to J.E.N. and an NIH grant to J.M.M. and B.J.M.

Received 9 November 1981; accepted 2 February 1982.

1. Yamada, Y. *et al. Cell* **22,** 887–892 (1980).
2. Wozney, J., Hanahan, D., Tate, V., Boedtker, H. & Doty, P. *Nature* **294,** 129–135 (1981).
3. Boyd, C. D. *et al. J. biol. Chem.* **255,** 3212–3220 (1980).
4. Monson, J. & McCarthy, B. J. *DNA* **1,** 59–69 (1981).
5. Monson, J. M., Natzle, J. E., Friedman, J. & McCarthy, B. J. *Proc. natn. Acad. Sci. U.S.A.* (in press).
6. Lehrach, H. *et al. Proc. natn. Acad. Sci. U.S.A.* **75,** 5417–5421 (1978).
7. Lehrach, H. *et al. Biochemistry* **18,** 3146–3152 (1979).
8. Adams, E. *Science* **202,** 591–598 (1978).
9. Ashhurst, D. E. & Bailey, A. J. *Eur. J. Biochem.* **103,** 75–83 (1980).
10. Evans, H. J., Sullivan, C. E. & Peiz, K. A. *Biochemistry* **15,** 1435–1439 (1976).
11. Harper, E., Siefter, S. & Scharrer, B. *J. Cell Biol.* **33,** 385–393 (1967).
12. Hung, C.-H., Noelken, M. E. & Hudson, B. G. *J. biol. Chem.* **256,** 3822–3826 (1981).
13. Kimura, S. & Matsura, F. *J. Biochem., Tokyo* **75,** 1231–1240 (1974).
14. Kimura, S. & Tanzer, M. L. *Biochemistry* **16,** 2554–2560 (1977).
15. Peczon, B. D., Venable, J. H., Beams, C. G. & Hudson, B. G. *Biochemistry* **14,** 4069–4075 (1975).
16. Fuller, F. & Boedtker, H. *Biochemistry* **20,** 99–1006 (1981).
17. Biessmann, H., Kuger, P., Schropfer, C. & Spindler, E. *Chromosoma* **82,** 493–503 (1981).
18. Hilliker, A. J., Apple, R. & Schalet, A. *Cell* **21,** 607–620 (1980).
19. Ashburner, M. *Chromosoma* **38,** 255–281 (1972).
20. Ashhurst, D. E. *A. Rev. Ent.* **13,** 45–74 (1968).
21. Wright, T. R. F. *Adv. Genet.* **15,** 262–395 (1970).
22. Fristrom, J. W., Hill, R. J. & Watt, F. *Biochemistry* **17,** 3917–3924 (1978).
23. Reid, K. B. *Biochem. J.* **155,** 5–17 (1976).
24. Lwebuga-Mukasa, J., Lappi, S. & Taylor, P. *Biochemistry* **15,** 1425–1434 (1976).
25. Hall, J. C. & Kankel, D. R. *Genetics* **82,** 517–535 (1976).
26. Sánchez, F., Natzle, J. E., Cleveland, D. W., Kirschner, M. W. & McCarthy, B. J. *Cell* **22,** 845–854 (1980).
27. Southern, E. M. *J. molec. Biol.* **98,** 503–517 (1975).
28. O'Farrell, P. O., Kutter, E. & Nakanishi, M. *Molec. gen. Genet.* **179,** 421–435 (1980).
29. Wahl, G., Stern, M. & Stark, G. R. *Proc. natn. Acad. Sci. U.S.A.* **77,** 3684–3688 (1979).
30. Monson, J. M. *Meth. Enzym.* **82,** 218–225 (1982).
31. Thomas, P. S. *Proc. natn. Acad. Sci. U.S.A.* **77,** 5201–5205 (1980).

Errata

In the letter 'Chorus-related electrostatic bursts in the Earth's outer magnetosphere' by L. A. Reinleitner, D. A. Gurnett and D. L. Gallagher, *Nature* **295,** 46–48 (1982), in Fig. 1 legend the words 'features of the chorus related electrostatic bursts. The slight inter-' have been repeated. Thus the second sentence should read 'The slight interference from 1738:45 to 1739:17 UT (also in Fig. 3) is from the ISEE electron density experiment.

In the article 'Protochordate allorecognition is controlled by a MHC-like gene system' by V. L. Scofield, J. M. Schlumpberger, L. A. West and I. L. Weissman, *Nature* **295,** 499–502 (1982), in Table 4 legend the percentage fusible progeny yielded by crosses where no alleles are shared should be 75%, not 7.5%.

In the letter 'Stereochemistry of iron in deoxyhaemoglobin' by M. F. Perutz, S. Samar Hasnain, P. J. Duke, J. L. Sessler and J. E. Hahn, *Nature* **295,** 535–538 (1982), in the final paragraph of page 537, references 14 and 12 should read 15 and 11, respectively. On page 538 the reference cited at the top of the second column of text should be 12, not 13.