science in recent times, with its consequent dependence on the services of specialists and the functioning of large (sometimes vast) complexes of equipment. An interesting question which has not been explored is the secular dependence of multiple authorship on time; are the papers today with 20 or so authors, as indicated in Fig. 1, merely the precursors of papers with 50 or 100 authors that will appear some decades hence?

A guest editorial by Uhrbrock (*1*) in *Science* is germane to the results of this study. Uhrbrock's conclusions are based on the following premises: (i) Research in industrial laboratories is conducted mainly by teams of investigators, and (ii) investigation by teams is in some sense inimical to the proper ends of science and to the best interests of the individual investigator. At least for the sample studied in this report, it is clear that premise (i) is not restricted to industrial laboratories but is valid a fortiori for academic and government laboratories, on the logical assumption that any number of authors in excess of one constitutes a team (the dictionary definition). In view of the stature of the *Physical Review* in its field, it would appear, further, that premise (ii) is not valid in general. Uhrbrock's conclusion is that the prospective investigator in an industrial laboratory should protect himself against the danger of the team by means of a written statement obtained before employment. However, the correlation with joint effort of rank of institution in research productivity, as implied in Fig. 2, suggests the possibility that in many laboratories such a step might defeat its own end. Without examining the numbers involved, Shockley (*6*) has taken issue on essentially the same grounds with views of Miessner (*6*) similar to those of Uhrbrock.

Contrary to a possible implication in Uhrbrock's discussion, 172 communications in the sample studied attest to a basic willingness on the part of industrial laboratories to publish research results. At least in the laboratory with which we are affiliated, approval of the patent department (approval which has never been denied) is the only requirement for submission of a finished piece of work for publication (as against the time-consuming and uncertain security clearance required in many government laboratories and research enterprises conducted by universities and institutes) (*7*).

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References and Notes

1. R. S. Uhrbrock, *Science* **128**, 747 (1958).
2. W. Shockley, *Proc. I.R.E.* (*Inst. Radio Engrs.*) 45, 279 (1957).
3. The designation *government* includes laboratories operated by a national government or operated for it by universities or industrial contractors. Foreign "institutes of physics" were classed as academic.
4. In cases where the names of laboratories of more than one category appeared in a by-line, prorated fractions were assigned to the number of communications from each category for that value of *N*. In Fig. 1, the resulting numbers were rounded to the closest integer above.
5. H. N. V. Temperley, *Science* **124**, 355 (1956).
6. B. L. Miessner and W. Shockley, *Proc. I.R.E.* (*Inst. Radio Engrs.*) 45, 409 (1957).
7. We wish to acknowledge discussions with Dr. W. Zeit of the School of Medicine of Marquette University, and to thank Miss H. Pandow for the computational work.

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I have no desire to prolong the discussion of the effects of team membership on the scientific careers of individuals employed in industrial laboratories. Gilvarry and Ihrig have presented data showing that multiple authorship is increasing in the field of physics. Smith [*Am. Psychologist* **13**, 596 (1958)] reported a similar trend in psychology. These studies show that (i) team research is being conducted on an increasingly large scale in governmental, academic, and industrial laboratories, and (ii) *some* teams are reporting their results, listing two to 20 persons as collaborators.

We have no evidence about the number of teams in existence at any one time or any indication of the proportion of completed projects reported. Young scientists should be aware of the trend toward team research and should consider its possible effect upon their individual careers. The time to ask questions is before accepting employment. That, as simply as I can state it, is the point I wish to emphasize.

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Enchytraeus fragmentosus, a New Species of Naturally Fragmenting Oligochaete Worm

Abstract. A new species of enchytraeid (Oligochaeta) worm has no sex organs, but reproduces solely by fragmentation.

In April 1956 I received from R. A. Didriksen of Iowa State College some fresh enchytraeid worms, believed to be *Enchytraeus albidus*. Careful investigation, whole-mount and serial section studies, revealed that the culture was a mixture of two species, the one being *Enchytraeus fonteinensis* Michaelsen (1927), the other of uncertain classification. The separate cultures have been going for over 2 years, the *E. fonteinensis* reproducing from cocoon to cocoon about every 10 days, the other species reproducing by fragmentation in about the same length of time.

The amazing thing about the second species is the phenomenon of fragmentation. Fully mature worms break into from 3 to 11 fragments, usually of about five segments each. Each portion fully regenerates in a period of about 10 days. There is every reason to believe that full regeneration of vital structures results from changes of undifferentiated tissues of the body; I have not undertaken such an investigation, but have noted unusual, large "formative" cells in the body cavity.

Since the material lends itself to a great number of investigations—for example, regeneration processes; gradients, polarity and reversal of polarity; radiation experiments; possible mutations; pharmacological investigations—I offer to supply living material at postage cost to any applicants.

Enchytraeus fragmentosus n. sp. Because these worms have no sex organs, the usual criteria for determination of species, other characteristics will have to be adduced for diagnosis. Before I was aware of the unusual reproductive method in this worm (to my knowledge it is exceptional for all oligochaete worms), I regarded the worm as an immature specimen of *E. albidus*. The peptonephridia come from a dorsal pouch in segment III and divide into two sac-like masses passing caudad and ventrad in segment IV as in *E. albidus*. There are, however, a number of twigs off the main sacs in segment IV. There is one outstanding difference in the new species—namely, the possession of four pairs of septal glands instead of the usual three pairs. The type specimen is in my collection.

Diagnosis: Color white; length 10 to 16 mm in crawling; segments about 50 when fully developed; diameter 0.25 mm; setae straight, two only per fascicle; no special glands; no clitellum; prostomium rounded; head pore at 0/I. Brain nearly round, concave anteriorly and indented posteriorly, 65 μ wide and long. Pharynx in segment III with typical high palisade cells in roof; oesophagus widens gradually, no oesophageal pouches; peptonephridia arise in segment III from a dorsal pouch and branch into two elongated sacs in segment IV, with a number of terminal twigs. Chloragog cells large without granules. Septal glands (pharyngeal glands) lie on septa IV/V, V/VI, VI/VII, and VII/VIII. Dorsal vessel arises in segment XIII. Coelomocytes (lymphocytes) with clear, loose cytoplasm and large nucleus; circular; 15 to 20 μ in diameter; appear to be amoeboid in the living. Nephridia with small preseptal (20 μ long, 10 μ wide); postseptal larger (50 μ long, 20 μ wide) with terminal duct. No sex organs: reproduction solely by fragmentation.

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