A NOMOGRAPH FOR USE IN POPULATION STATISTICS

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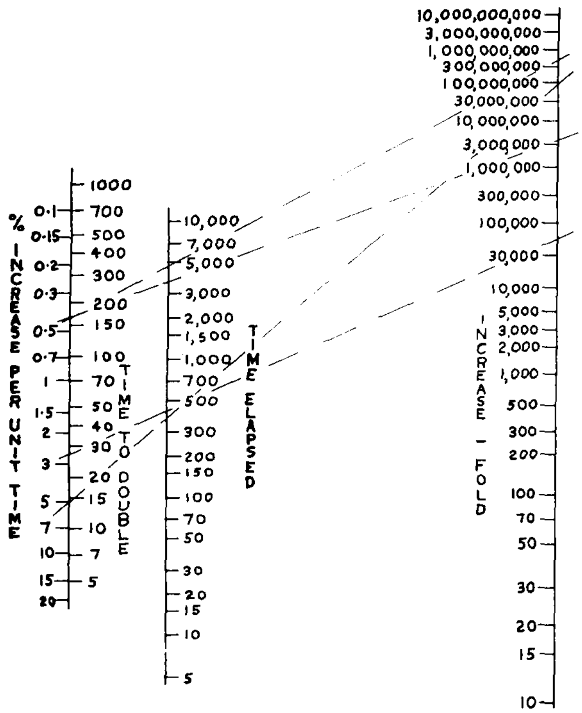

This nomograph may be used for calculating increases in populations, as is explained in the accompanying article. A straight line, joining points on any two of the scales, will cross the third scale at a corresponding point of appropriate magnitude. The four broken lines are explained as examples of application of this nomograph.

This nomograph is for quick, approximate, calculations of increase in populations. There are three scales, for the three quantities concerned:

(1) the rate of increase, expressed in per cent per unit time (or the time for the population to double, which is another way of expressing the same information);

(2) the time elapsed;

(3) the increase, e.g. one thousand fold.

It is used thus: A straight line, joining any two of these quantities on the respective scales, will cross the scale of the third quantity at the place of appropriate magnitude. Thus, if any two of the three quantities are known, the third may be found by just putting a straight edge on the nomograph.

It may be necessary, of course, to interpolate between the numbers actually marked. Two of the scales are logarithmic, and the third is a log-log scale; thus the divisions are net uniform. This is not, of course, a very precise means of calculation, but, then, great precision is rarely called for in these matters, for the information is usually not very precise.

Four Examples Explained

The broken lines show examples of the use of this nomograph. The Children of Israel, e.g., increased from five persons (Jacob, two wives, and two concubines) at about 1950 B.C. to approximately 18,000,000 persons today; an increase of about 3,600,000-fold in about 3900 years. If 3,600,000-fold increase and 3900 years are joined on the graph, the line intersects the third scale at about 0.4% increase per year, which amounts to doubling in about 175 years.

Again, the population after the Flood was eight persons; today, the world population is about 3,000,000,000; an increase of about 375,-000,000-fold. If the average rate of increase was the 0.470 per year found above, the line shows that the time elapsed must be about 4,800 years, which would put the Flood about 2800 B.C. This is not far out of line with certain chronologies.

Furthermore, the fact that statisticians independently choose a figure of about 150 years[1] for the doubling time for human populations is evidence in favor of the Bible chronology from Noah to the present which yields a similar figure-175 years. It should be acknowledged that these calculations have been made by others, maybe with slightly different numbers.[2, 3]

Yet again, the Children of Israel increased in Egypt from about 70 to something around 3,000-000 (as an estimate). This would be an increase of about 43,000-fold in 430 years. (I know that some make the actual time in Egypt less, but let this pass for the sake of an illustration.) The graph shows that this would mean in increase of about 2.8% per year, which means doubling in about 27 years. And that is not out of reason, for there are populations increasing more quickly than that during present time.

Finally, consider the increase between the flood and Abraham's time, an interval of say 400 years. If the increase was rapid, say 5% per year (and more rapid increases have been known), the increase would have been about 100,000,000-fold, and thus the population of the world about 800,000,000. In fact, the rate of increase was likely somewhat less; but this is enough to show that there is no difficulty in the apparently considerable population of Abraham's time, although it was not so long after the flood.

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Useful for Variety of Populations

This graph can be used for populations very different from human beings, e.g. bacteria in a culture. In such a case, it might be convenient to take as the "unit time" something other than a year; maybe a minute in dealing with the bacteria. The "time to double" and "time elapsed" must, of course, be expressed in the same units as the "unit time," e.g. in minutes as suggested for the bacteria.

The decay of radioactive isotopes can also be calculated with the graph. Then, instead of "increase," the change will be "decrease": decrease per unit time and decrease–fold. Thus, a hundred-fold decrease would mean that the amount of the isotope had decreased to $^1/_{100}$ the amount at the beginning of the period of time. The "time to double" would be considered the time to decrease to half–the familiar half-life. Again, the "unit time" need not be a year, provided only that all times are in the same units. In dealing with radioactive carbon, e.g., with a half-life of about 5500 years, it would be convenient to express time in centuries.

The reader might ask: "What is there creationistic about this graph?" In a sense, the answer must be—nothing. An evolutionist could use it just as well as a creationist.

Still, the creationist will be more interested in population statistics, especially of human beings. For the enormous time periods demanded by evolutionists do not allow any appreciable rate of increase; they can "fit in" only with fluctuation about some more or less constant number. But that is not what we see today; thus again the present would not be the correct key to the past.

If, on the other hand, one postulates a human population that has been increasing for only a few thousand years, as most creationists do, it seems likely that the populations of man and of the larger animals have increased more or less uniformly. Moreover, it seems likely that, as well as the start at creation, there was a fresh start at the flood.

So it makes sense for the creationist to study population statistics. In theory, someone might believe in evolution followed by a fairly recent universal flood; but, in fact, probably no one does. And a creationist who believed in a fairly recent creation and a local flood (and some, it appears, have held such views), could still be interested in these statistics.

The reason that these remarks are restricted to man and the larger animals is that surely the smaller animals, rabbits for instance, have run into plagues, overpopulation, etc., many times in the past, and these things have affected their numbers greatly. But there is no evidence that such things have had any considerable effect on man; and it would seem likely that the same thing could be said (at least, until a century or so ago), about the larger animals, and especially about such kinds as elephants.

References

[1]Enoch, H. 1966. Evolution or creation. Evangelical Press Fellowship House, 136 Rosendale Rd., London S.E. 21, pp. 132-137. (Also available from Puritan Publications, Inc., 25 W. High St., Carlisle, Pa. 17013,)

[2]Whitcomb, J. C., and Morris, H. M. 1961. The Genesis flood. The Presbyterian and Reformed Publishing Company, Philadelphia, pp. 396-398.

[3]Hand, J. R. 1959. Why I accept the Genesis record. Back to the Bible Publishers, Lincoln, Nebraska, pp. 76-81.

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this paucity of fossils even casts doubt upon their usefulness in determining the relative ages of rocks.)

The difference between types of living things is not simply a matter of different degrees of complexity. They are constructed according to different patterns, and each pattern is well fitted to the life habits of that organism. Zoologists agreed a long time ago that animals cannot be listed in a single column to supposedly represent development from the lowest and simplest.[2] Since this is true, a chance addition is more often a detriment than an advantage. Also, most mutations known are destructive and deleterious, and further no new characteristics come about through gene mutations. Only undesirable changes of existing characteristics occur through gene mutations.

We say again, observe, read, and think for yourself. It is impossible for a general permanent improvement to take place at the same time that the Second Law of Thermo-dynamics is leading to loss and disorder.[3] See if a perfect creation followed by loss and decay does not fit the facts much better.

References

[1]Moment, G. B. 1958. General zoology. Houghton, Mifflin, New York, p. 423.

[2]Hegner and Stiles. 1951. College zoology. Sixth Edition. Macmillan Company, New York, pp. 292 and 798.

[3]Williams, Emmett L., Jr. March, 1969. A simplified explanation of the laws of thermo-dynamics, *Creation Research Society Quarterly*, 5:138-147.