A QUASI-NINE YEAR OSCILLATION OF THE WATER LEVEL IN LAKE COPAIS (GREECE) CITED BY THEOPHRASTUS (4TH CENTURY B.C.) AND PLINY (1ST CENTURY A.D.)

C. C. REPAPIS

Abstract. From the analysis of the modern rainfall data in the area of Lake Copais in Boetia of eastern Greece and on the basis of the observations of the water level quoted by Theophrastus (4th century B.C.) from earlier days than his own, as well as by Pliny (1st Century A.D.), it seems that a quasi-nine year oscillation becomes prevalent from time to time in the rainfall of the general area of this lake though we do not know the physical cause of the phenomenon.

1. Introduction

The various natural phenomena and forces like the sunheat, the winds, the rains, the earthquakes etc., attracted the attention of the ancient people and became matters of worship. The periodical recurrences, daily and annual, of some characteristic natural phenomena, became part of the worshiping rituals in many ancient religions. Some anniversaries, celebrations and symbolic numbers which became parts of legends, probably have their origin in natural phenomena. Probably an analogous case are the expressions found in the Greek Mythology and ancient literature, ‘ἐννεαετηρίς’ meaning a period of nine years, as well as the relative expression ‘ἐννεαορός’.

Plutarch (46–127 A.D.) refers that in Delphi three festivals were performed one after another every nine* years in honor of Dionysus (Plutarch, Moralia, 293, B.12). It is worth noting that in the Greek mythology Dionysus is referred to as the god of tillage and has been born from Zeus in the middle of lightnings and thunders.

Homer (8th century B.C.) refers to king Minos of Cnossus in Crete that he reigned through periods of nine years and held conversations with great Zeus (Homer, The Odyssey, XIX, 178–179).

Plato (427–348 B.C.) relative to the above Homer's statement writes: ‘So every ninth year Minos repaired to the cave of Zeus, to learn some things, and

* ‘Nine’ is the literal translation, but some render ‘every eight years’, because in the ancient Greek way of counting usually, though not always, both years are included in which consecutive festivals were held; that means between two festivals there were only eight complete intervening years (see for details Samuel, 1972).

Fig. 1. Map of Greece. The shadowed area is enlarged showing the Copais basin.

to show his Knowledge of others that he had learnt from Zeus in the preceding nine years'. (Plato, *Minos, 319 E*).

The above quotations, which are few to mention, are more or less in the nature of myth. Theophrastus (372–287 B.C.) describes a physical phenomenon related to the nine years periodicity which occurs in Lake Copais and was observed in days before his own. Lake Copais is a large Karstic lake in Beotia (east central Greece) east of the mountain Parnassus. West of the lake side at a distance of 60 Km is situated the town of Delphi (Figure 1).

Theophrastus writes: 'As to the reed used for pipes, it is not true as some say that it only grows once in nine years and this is its regular rule of growth; it grows in general whenever the lake is full but because in former days this was supposed to happen generally once in nine years, they made the growth of the reed to correspond, taking what was really an accident to be a regular principle. As a matter of fact it grows whenever after a rainy season the water remains in the lake for at least two years'. (Theophrastus, *Enquiry Into Plants, IV, chapter XI, 2–3*). For the same phenomenon Pliny (23–79 A.D.) mentions the following: 'The third (kind of reed) is the flageolet reed; 'pipe reed' used to be the Greek name for it. This grows during the ninth year, as the lake also regularly