

*The Present Status of Teropterin**

Pteroyl Triglutamic Acid

DURING the past 3 years there has been intense interest among investigators and clinicians in folic acid and its congeners. It is now universally recognized that folic acid (pteroyl monoglutamic acid) exerts a specific effect upon megaloblastic bone marrow, tending to restore it to normal function. It has been found essentially a specific treatment for the megaloblastic anemias of sprue, pregnancy, infancy and childhood, and those megaloblastic anemias which are of nutritional origin.

In the course of investigation of the syntheses of a number of pteroyl glutamic compounds, SubbaRow and his co-workers synthesized pteroyl-gamma-glutamyl-gamma-glutamylglutamic acid (TEROPTERIN Pteroyl Triglutamic Acid). This was found to possess microbiological activities identical with those of the naturally occurring fermentation *L. casei* factor. In 1944, Leuchtenberger, Lewisohn, Laszlo, and Leuchtenberger¹ reported the inhibition of Sarcoma 180, transplanted into female Rockland mice, by a folic-acid concentrate and a fermentation *L. casei* factor. Subsequent studies by the same group² showed complete regression of the malignancy in about one-third of single spontaneous breast cancers, observed in three strains of mice, following the intravenous injection of 5 micrograms of fermentation *L. casei* factor, now known to be pteroyl triglutamic acid.

Dr. Sidney Farber³ has reported observations on 90 patients with malignant disease,

for whom established therapeutic procedures offered no hope of cure, and to whom pteroyl triglutamic acid was given. The patients ranged in age from 3 to more than 71 years and their cases included many varieties of malignant tumors. This report revealed, among other things, that this substance is nontoxic when given either intramuscularly or intravenously.

Although the ideal method of administration appears to be by the intravenous route, the substance is usually given intramuscularly, so that ambulatory treatment may be employed. In the cases treated, pain has been lessened, and improvement in the nutrition and sense of well-being of the patients is marked.

A substantial amount of investigation is proceeding in this field, not only with pteroyl triglutamic acid, but also with allied compounds as rapidly as they are synthesized. Detailed analysis of the case histories reported is not indicated at this time, since they are too few in number to be statistically significant with respect to a subject of such biologic intricacy as malignancy. However, the interim conclusions of the *Lederle* staff upon the work to date may be summarized as follows:

(1) TEROPTERIN Pteroyl Triglutamic Acid is not a cure for malignancy. Since it is not a cure, no indication for haste in securing it, or employing it, in any given case exists.

(2) It has been observed to date to exert its effects most often in a certain percentage

*Trade-mark