CORRESPONDENCE

PELOPONNESIA AND NITROGEN FIXATION

To the editor:

I enjoyed Stelios Papadopoulos's "Quarterly Report" in the April issue comparing the market in biotech stocks to the Peloponnesian War. However, if we must wait for Alexander for a bull market, we will wait about 68 years. Alex was king from 336 to 323 B.C.E.

In the same issue, I also enjoyed Douglas McCormick's review of nitrogen fixation. However, the article made an error in terminology—one that plagues the field. The bacteria, frankiae, that infect 18–24 genera (depending on your source) of woody plants, form nodules not "actinorhiza." The plants are "actinorhizal," the nodules are nodules, as in the rhizobia/legume system. The plants, belonging to so many families and genera, were designated as "actinorhizal" at the first international meeting on Symbiotic Nitrogen Fixation in Actinomycete-Nodulated Plants (*Botanical Gazette* 140 March, 1979; see the preface by J. G. Torrey and J. D. Tjepkema).

Lynn Miller
Professor of Biology
Hampshire College
Amherst, MA 01002

CONTINUED USE OF FBS

To the editor:

Hazleton Biologics, Inc. recognizes the economic impact that the shortage and resulting price increase of fetal bovine serum has had on biotechnology companies. Applications resulting in products for *in vivo* use require FBS with stringent specifications. As collectors of raw serum have attempted to meet market demands, the amount of raw serum which meets these high specification requirements has decreased and the cost has increased.

It is an accepted fact that fetal bovine serum is somewhat unique in its ability to support and maintain mammalian cell growth. To date, a suitable, broad-range substitute for FBS has not been found. Hazleton has a number of FBS substitutes and alternatives available and is developing more. We do anticipate, however, a continuing demand for and supply of FBS and are confident of our ability to meet our customers' FBS needs.

An article in the March 1988 issue of *Farm Journal* indicates that ten-year

livestock cycles show that cattle numbers have tended to peak in mid-decade and hit their lowest point at the end of the decade. Although no one has a crystal ball, HBI does feel that FBS will continue to be available for use in biotechnology development projects and manufacturing.

Increasing awareness of the need for suitable substitutes and development of FBS alternatives in partnership with biotechnology firms should be the long-term goal of all fetal bovine serum suppliers to the biotechnology market.

Gladys Smith-Gillespie
Marketing Manager
Hazleton Biologics, Inc.
P. O. Box 14848
Lenexa, KS 86215

BOVINE VS. HUMAN TRANSFERRIN

To the editor:

We read (*Bio/Technology* 6:575–577, May '88), "Notes on Culture Media" by Jane Williams, and wish to comment on the remark concerning bovine transferrin costing

compared to human transferrin.

With the increasing need to eliminate fetal bovine serum in media, specifically in scale-up applications, it is important to assess the utility and long term supply of serum-free media components. With recombinant Factor VIII soon to be commercialized and human serum albumin thereafter, or replaced altogether with alternate blood plasma expanders, it is believed that human plasma fractionation will, in the future, be limited. This will severely affect the supply and cost of human transferrin.

On the other hand, the supply of bovine transferrin, derived from plasma collected at USDA inspected slaughterhouses, will not be restricted. It is interesting to note that the price, in bulk, for bovine transferrin is significantly lower than human transferrin.

Roy Val
Sales & Marketing Manager
Waitaki International Biosciences
55 Glen Scarlett Rd.
Toronto, Canada M6N 1P5

ERRATA

We regret that Figure 2 in the research paper "Crystallization of a Lignin Peroxidase from the White-Rot Fungus *Phanerochaete chrysosporium*" (Jakob Troller et al., *Bio/Technology* 6:571–573, May '88) appeared without an insert. The correct figure is reproduced below.

Also, on page 572 of the same research paper, an incorrect value was printed. The correct line reads:

"Based on the calculated V_M -value¹⁸ of $2.08 \text{ Å}^3 \text{D}^{-1}$ it is likely that one lignin peroxidase molecule occurs per asymmetric unit."

FIGURE 2 Absorption spectrum of a single lignin peroxidase crystal. From 450 to 700 nm the spectrum is also shown in 4-fold enlargement. The measurement was carried out at room temperature with unpolarized light in 30% PEG, pH 4.0. Insert: part of the crystal used for recording the spectrum. The bar represents 0.1 mm.