The wire was adjusted to white heat and the tube turned to the sky, the wire being visible as a thin, bright line projected on the sky to several degrees west of the moon. Its temperature was then reduced until it made a *black* line against the sky. When turned upon the moon, this line appeared as a feeble *red* line against the dark side of the moon, though remaining black in the sky outside. The test (which was witnessed) was repeated in the July lunation with the same result.

It is felt, therefore, that Dr. Giddings' original observation is entitled to serious credit, and that probably he had the absolutely unique experience of catching a flight of meteors at the moment of projection against the moon.

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Value of Cytochrome C in Anoxia of Newborn Guinea Pigs

Recent reports by Proger and his associates (*J. clin. Invest.*, 1945, 24, 864; *Science*, October 25, 1946, p. 389; *J. Pediat.*, 1946, 29, 729) concerning the role of cytochrome C as a therapeutic agent in combating the effects of tissue anoxia in man have aroused considerable interest. Proger has stated that cytochrome C is present in suboptimal amounts for the most efficient utilization of oxygen in the tissues and that injection of this material results in an increase in the blood and organ content of cytochrome. He has further shown that addition of cytochrome to homogenized tissue suspensions is followed by an increase in oxygen uptake. On the basis of these studies Proger has suggested that cytochrome might be useful in the treatment of asphyxia of the newborn.

As a preliminary to the possible application of this agent in human subjects we have studied the value of cytochrome C in counteracting the effects of induced anoxia in newborn guinea pigs. Animals less than 24 hrs old were placed in a chamber containing an atmosphere of pure nitrogen and allowed to remain until they had gone through a cycle of hyperpnea, convulsions, and, finally, slow gasping respirations or cessation of respirations. They were then removed from the chamber to permit recovery under normal atmospheric conditions. This process was repeated from 2 to 5 times, usually until prolonged artificial respiration was necessary for resuscitation. Prior to the test, each litter was divided, half the animals receiving an intraperitoneal injection of 1.9 mg of cytochrome C and the other half serving as controls. The tests were carried out 1 hr after injection.

We attempted to determine, first, whether injected animals, by virtue of more efficient utilization of oxygen remaining in their tissues, might retain consciousness for a longer period than uninjected litter mates sharing the chamber with them; second, whether injected animals, after cessation of respirations, could be more rapidly revived by artificial respiration and whether they would show a lesser immediate mortality; third, whether injected animals could be protected from the damaging sequelae of cerebral anoxia. In this connection, surviving animals at 12–16 weeks of age were tested for their ability to solve an alternating maze problem similar to that described by Windle and Becker (*Amer. J. Obstet. Gynec.*, 1943, 45, 183). The final score based on 35 trial runs took into account the factors of time, error, and necessity for prodding stimulation. Thus, the higher the score, the poorer the performance.

The results are summarized in Table 1. There was no observable difference in the two groups with regard to maintenance of consciousness, ease of resuscitation, or immediate mortality from anoxic exposure. Furthermore, both groups showed essentially similar degrees of impaired performance in the maze when compared with normal animals of the same age.

Recently Potter (*Science*, October 10, 1947, p. 342) has challenged Proger's basic premises with respect to cytochrome and has pointed out that increasing interest in the clinical use of cytochrome indicates the need for further studies. Negative reports by Scheinberg and Michel (*Science*, April 4, 1947, p. 365) and Stadie and Marsh (*J. clin. Invest.*, 1947, 26, 899) have appeared. Our experiments similarly fail to support the idea that cytochrome may be useful in the clinical treatment of anoxic states of newborn infants. It may be mentioned that in a separate series of experiments we attempted to determine the therapeutic efficacy of cytochrome C in the treatment of cyanide poisoning in rats. The results suggested that cytochrome may be of some value in the treatment of this condition. These studies will be described more fully at a later date.

TABLE 1

	No. of animals	Succumbed in chamber	Survived	Died of intercurrent inf.	Maze tests			
					No. of animals	Mean of avg. scores	σ	P.E.
Anoxia + cytochrome	43	11	32	9	17	33.2	3.15	0.52
Anoxia; no cytochrome	42	11	31	11	17	30.9	3.16	0.52
Normal controls	32	..	..	..	32	18.7	1.57	0.19

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