ticle of matter to insure that the chamber contains black body radiation. Further suppose that an alternating electric field is applied to the chamber so that the electron moves to and fro, but without touching the walls. If the electron is perfectly reflecting it will perform work upon the radiation, and the temperature will accordingly continually increase till the radiant energy per cc is infinite. But such a concentration of energy, we may take it, is impossible. The electron can not therefore be perfectly reflecting, or it absorbs besides reflects radiant energy. Now a continual increase in its internal energy through absorption of radiation on account of its motion is not permissible, since in that case its internal energy would ultimately become infinitely large, and hence it is periodically converted into some other form. This can not be radiation produced by acceleration, since the energy required for this is derived from the kinetic energy of the electron, or the energy of the applied field. The internal energy must therefore be converted directly into radiation, and hence the electron may radiate in two entirely different ways.

But even under these circumstances the applied field will perform work upon the electron, for the energy converted into radiation through acceleration may be varied through the applied field, and this work ultimately appears as radiation. Thus the density of the radiation may be made infinitely large, which we have seen is impossible. It follows, therefore, that ultimately the applied field should have no effect on the electron, or that its field decreases till zero. Since the temperature under these conditions will be very large, causing a large absorption of radiant energy by the electron, its average amount of internal energy will in consequence be very large. Thus in a general way the external field of an electron decreases with increase of its internal energy.

We might also in the beginning have supposed that the force on the electron decreases with increase of density of radiation. Since the density would nevertheless become infinite, we must suppose that the force becomes zero for a finite density. This is possible only if the electron undergoes a change, which naturally involves a change in internal energy, and so on.

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NOTE ON HAEMOGLOBIN

DURING the course of a spectrographic examination of horse and fowl haemoglobin we have noted that the absorption band, whose peak appears at AU4100 for oxyhaemoglobin and AU4300 for haemoglobin in solutions of the above compounds, does not appear when washed corpuscle suspensions containing haemoglobin and oxyhaemoglobin in similar concentrations are examined. Furthermore the absorption which begins at AU2500 in solutions of horse haemoglobin also is absent when haemoglobin or oxyhaemoglobin is observed in washed cell suspensions. The specific bands in the visible regions of solutions of the above pigments are observed in the washed cell suspensions in their usual location.

Apparently there is, in the case of haemoglobin in the cell, a possibility that it is in combination with some constituent of the corpuscle. This problem is one of several concerning the blood pigment for which we are attempting to find a solution.

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A FOSSIL MAMMAL WITH UNBORN TWINS

THE South Dakota State School of Mines has recently mounted and placed on exhibition in its geological museum a most unusual fossil vertebrate specimen from the Oligocene of South Dakota. This is a superbly preserved skeleton of a mother *Oreodon* (*Merycoidodon*) *culbertsoni* with unborn twins. It is the only known occurrence of a fossil mammal accompanied by unborn young.

The specimen was found by the School of Mines collecting party of 1928, Mr. James Bump, Mr. Robert Hernon and Mr. Harold Martin, in the Lower Oreodon beds of Cain Creek, about two miles north of Imlay in the heart of the Big Badlands. Only a small portion of the skull of the mother was exposed to the weather. Excavation disclosed the complete skeleton except that the ribs on the right side were mostly missing. Upon turning over the block in the field for final shellacking and other protection, the skulls of two unborn individuals, lying within the pelvic region, were discovered. A photograph of the rough block made in the preparing room before work was begun upon it shows in good way much of the skeleton of the mother and the positions occupied by the twins.

The mother skeleton, the right side showing, is mounted in relief on a nicely tooled slab. The skeletons of the twins are only partially preserved. Some of this loss is due doubtless to the cartilaginous, nonpetrifying nature of the material. The better portions are the skulls and some of the larger leg bones. The skull of one is well preserved and nearly perfect. The other may be easily discerned but is much crushed and the parts displaced. Both skulls show well-developed teeth. The cranial bones are very thin and delicate and much care was necessary to prevent injury to them. In the mounting of the specimen