The anemias of infancy and childhood are classified into three well-defined groups, viz., (1) dyshemopoietic or deficiency anemias, (2) hemolytic or erythronoclastic anemias, and (3) anemias of hemorrhagic diathesis. Any rational treatment should, therefore, be directed against the etiological factor when known, and symptomatic treatment should be adopted in other cases. Whether the mechanism be infection with blood destruction and toxic suppression of the bone marrow, or omission of blood building material from the diet in nutritional anemia, the general form of treatment will follow the same outline. Iron and iron catalysts (chiefly copper, vitamin B₁₂ and thyroid extract), liver and liver extracts, whole blood and vitamin C constitute our sheet anchor in the treatment of these anemias. Infection and anemia form a vicious circle and all attempts at treatment are useless until the infectious process has been overcome. For, with the onset of anemia the liability of the subject to infection is greatly increased and all infections, particularly in children, are associated with a tendency to anemia.

DYSHEMOPOIETIC OR DEFICIENCY ANEMIAS

The dyshemopoietic anemias of infancy and childhood are due to deficiency of one or more of those essential factors which are necessary for the maturation of the erythrocytes. The commonest form is the so-called nutritional anemias of infants, which are caused by an iron deficiency. There are also the anemias due to vitamin and endocrine deficiencies, and those which result from infection, toxemia and wasting diseases. These anemias are readily cured by the removal of the cause and the administration of iron with well-balanced high vitamin and high caloric diet.

IRON DEFICIENCY ANEMIAS

Physiological Anemia of Infancy: The physiological anemia of the new-born does not require any treatment and spontaneous recovery is usual about the fifth month of life. The anemia of prematurity recovers at a later date. Administration of iron in the form of iron and ammonium citrate by mouth, or intramuscular injection of 15 c.c. citrated human blood during this period does not prevent the hemoglobin from falling, nor does it influence the production of reticulocytes or red cells.

*Submitted for publication, November 10, 1936.
ANEMIA IN TWIN BIRTHS: The anemia of twin births is readily cured by the addition of iron to the milk food. Some authors recommend as much as 60 grs. of saccharated ferrous carbonate per day.

ANEMIA OF PREMATURITY: This anemia cannot entirely be prevented, but it can be improved by early administration of iron in large doses. Iron in the form of iron and ammonium citrate (50 per cent aqueous solution) has proved to be a satisfactory preparation in the improvement and treatment of anemia. A dose of 0.3 gm. (0.05 gm. reduced iron) per Kg. body-weight appears to be adequate. Josephs however recommends that although iron may raise the hemoglobin content, transfusion must still remain the method of choice in treating the condition as a whole. Liver has not been proved a necessary adjunct to iron, though in individual cases it may be of benefit.

With the administration of iron or liver to premature babies, there is a preliminary period of six to ten weeks after birth, during which the drugs fail to show any improvement. This period of non-reactivity is followed by a short transition period with delayed response, after which, administration of iron or liver is followed by a prompt response of the reticulocytes and a rise in red cells and hemoglobin. Infants treated with iron or liver and iron after they become anemic show a greater decline of red cells and hemoglobin and respond more slowly to treatment than those who receive anti-anemic therapy from birth. Copper has no demonstrable effect.

NUTRITIONAL ANEMIA OF INFANCY

PROPHYLAXIS: Nutritional anemia of infancy can be prevented by insuring an adequate supply of iron to the mother during pregnancy and to the infant during the period of lactation, especially if the child is artificially fed, or if it is one of multiple pregnancies (e.g. twins), or if there is prematurity.

The diet of the mother should contain from 15 to 20 mg. of iron per day, for which the following prescriptions are recommended. All preparations of iron are given after food.

R/

Ferri et ammonii citratis     dr. 6
Syr. Limonis              oz. 1
Glycerine                oz. ½
Aqua                     to oz. 6
Sig. Two teaspoonfuls, three times a day.

R/

Ferri et ammonii citratis     gr. 15
Syr. Auranti              dr. 1
Aqua                     to oz. 1
Sig. One ounce, three times a day.