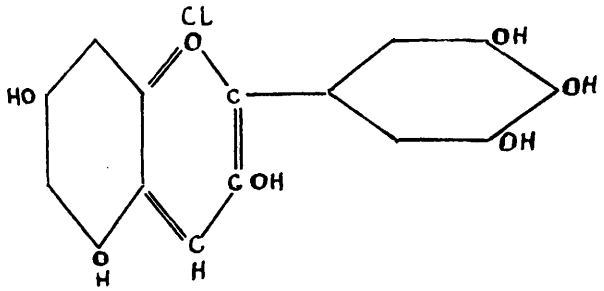

FIG. 1.
Delphinidin chloride. Illustrates nucleus in grape anthocyans.

examination of these urines showed that from 1 to 2% of the dye was excreted through the kidney. The doses used, however, were greatly in excess of the amounts ordinarily ingested.

Conclusion. The above experiments indicate that the anthocyans are not easily absorbed from the intestine. The small quantity which does pass through to the circulation appears to be excreted by the kidney in its unchanged form.

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Effect of Ferric Chloride Injections on Spread of Tuberculosis from Site of Subcutaneous Inoculation.*

VALY MENKIN.

From the Department of Pathology, Harvard University Medical School.

Previous studies have demonstrated that repeated intravenous injections of a 0.25% solution of ferric chloride crystals in tuberculous rabbits are followed by an accumulation of iron in the caseous areas of the lungs.[1, 2] Subsequent studies revealed that concomitant with this accumulation of iron in tuberculous areas there was a definite increase in the survival time of infected rabbits.[3, 4] When control and experimental animals were sacrificed at given intervals

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1 Menkin, V., PROC. SOC. EXP. BIOL. AND MED., 1930, **27**, 1020.

2 Menkin, V., and Menkin, M. F., *J. Exp. Med.*, 1931, **53**, 919.

3 Menkin, V., *J. Exp. Med.*, 1932, **55**, 101.

4 Menkin, V., *Am. J. Med. Sci.*, 1933, **185**, 40.

of time after inoculation with tubercle bacilli, in the majority of instances the extent of the lesion in experimental animals was distinctly less than that found in the controls.[4] The conclusion drawn was that with the accumulation of iron in tuberculous areas, the course of development of the disease is protracted in the rabbit.

Further experiments were set up to determine whether the repeated administration intravenously of ferric chloride solution would retard the dissemination of tubercle bacilli and hence the progress of the disease when microorganisms were inoculated into a subcutaneous area. Prior to the present study inoculation with tubercle bacilli had been performed only by the intravenous route.

A saline suspension of a bovine culture of tubercle bacilli was introduced into the subcutaneous tissue of the abdomen of each of 12 rabbits. Repeated intravenous injections of ferric chloride in concentration of 0.25% were started in 6 of the rabbits, immediately following the inoculation with tubercle bacilli. The remaining 6 tuberculous animals were kept as controls. The method of injecting ferric chloride and the precautions used throughout the course of administration to avoid lethal effects, have been described.[3, 4] Throughout the period of injections, death from embolism was no doubt prevented in the majority of instances by the fact that, as previously pointed out, the precipitate formed by the interaction of 0.25% ferric chloride with blood serum redissolved.[5] As a rule death resulting from intravenous administration failed to occur when the amount of 0.25% ferric chloride injected at one time was below 4 or 5 cc. The injections were always given very slowly. The ferric chloride solution was kept on ice when not in use. The solution was heated slightly prior to each injection.

After variable intervals of time ranging from 35 to 94 days, following inoculation with tubercle bacilli, a control and an experimental rabbit having had the disease for the same length of time would be sacrificed. A careful post mortem examination was performed. The spread of the disease from the site of inoculation in each rabbit was studied by determining, in the gross, the extent of tuberculosis in the peritoneal lining, the omentum, small intestine, colon, kidneys, spleen, liver, diaphragm and lungs. In the majority of control animals, tuberculosis was observed in practically all of these organs. In the experimental animals, on the contrary, tuberculosis was less widely distributed, being in some cases entirely absent from all organs, except in the lungs and kidneys where a few caseous lesions

[5] Menkin, V., *J. Exp. Med.*, 1931, **53**, 171.

could be found. The results of this series of experiments, consisting of 12 rabbits, showed some retardation in the spread of tuberculosis from a site of subcutaneous inoculation upon repeated intravenous injections of 0.25% ferric chloride. Further studies on this subject are being continued.

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Reciprocal Relationship Between Ovaries and Anterior Hypophysis as Factor in Control of Lactation.*

WARREN O. NELSON.† (Introduced by Carl R. Moore.)

From the Hull Zoological Laboratory, University of Chicago.

Experimental evidence has been presented (Nelson,[1] Nelson and Smelser[2]) which has been interpreted as indicating the existence of a reciprocal relationship between the ovaries and the anterior hypophysis in the control of mammary gland development and lactation. This hypothesis, which is related to that of Moore and Price[3] regarding the control of sex rhythms, held that while the female sex hormones are responsible for the mammary gland development of pregnancy they also inhibit the secretion of the anterior lobe hormone responsible for lactation. With removal of the inhibition at parturition the hormone is secreted and lactation occurs. It is evident that this conception correlates at least most of the known facts relating to normal and induced lactation. Recently, Smith and Smith,[4] and Selye, Collip, and Thomson[5] have presented evidence which supports this hypothesis.

Supporting the earlier experiments with non-pregnant female and male guinea pigs are the following observations from a series of studies on pregnant animals. It will be seen that they offer important evidence in support of the reciprocal relationship concept.

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† National Research Council Fellow.

1 Nelson, W. O., *Anat. Rec.*, 1932, **54**, 51.

2 Nelson, W. O., and Smelser, G. K., *Am. J. Physiol.*, 1933, **103**, 374.

3 Moore, C. R., and Price, D., *Am. J. Anat.*, 1932, **50**, 13.

4 Smith, G. V. S., and Smith, O. W., *Am. J. Physiol.*, 1933, **103**, 356.

5 Selye, H., Collip, J. B., and Thomson, D. L., PROC. SOC. EXP. BIOL. AND MED., 1933, **30**, 588.