

# PROGRESS OF MEDICAL SCIENCE.

---

## MEDICINE.

---

UNDER THE CHARGE OF

WILLIAM OSLER, M.D.,

REGIUS PROFESSOR OF MEDICINE, OXFORD UNIVERSITY, ENGLAND,

AND

W. S. THAYER, M.D.,

PROFESSOR OF CLINICAL MEDICINE, JOHNS HOPKINS UNIVERSITY, BALTIMORE, MARYLAND

---

**The Effect of Digitalis on the Ventricular Rate in Man.**—Of the cardiac irregularities produced experimentally by digitalis, the earliest to appear is usually an occasional omission of ventricular contractions, owing to the blocking of the stimulus from auricle to ventricles. A somewhat late phenomenon is the production of a complete auriculoventricular dissociation which differs from ordinary heart-block in that the ventricular rate is not slow, but approaches, and usually exceeds that of the auricles. Although a common result of digitalis poisoning in dogs, this condition has never been noted in man except in the case reported by HEWLETT and BARRINGER (*Arch. Int. Med.*, 1910, v, 93). Their patient, a man, aged twenty-seven years, with chronic myocardial insufficiency, who had taken digitalis in moderate doses over a considerable length of time, developed on the day before his death, a remarkable condition. Tracings of the venous pulse and apex showed a regularly recurring cycle of changes apparently depending on the interference of two systems of waves which were independent of each other, and not quite synchronous. Each cycle lasted about seven seconds and included fourteen ventricular contractions. The two systems of waves were evidently due to the auricular and ventricular contractions, and the rates were such that for thirteen auricular there were fourteen ventricular contractions. Hewlett and Barringer believe this to be the result of a cumulative action of the digitalis, and call attention to the fact that it may be difficult to ascertain when enough of the drug has been given, for at no time was there a slowing of the pulse. While in experimental heart-block the rate of the ventricle is increased by digitalis, there is little clinical evidence on the subject. In a case of complete heart-

block with slow pulse, however, the same writers failed to note any increase of ventricular rate after the use of moderately large doses of digitalis. It is possible that the appearance of extrasystoles and the temporary disappearance of the *a* waves from the jugular pulse (due to a toxic weakening of the auricular contractions?) may have been due to the drug.

---

**Auricular Fibrillation.**—It is well known that in the latest stages of cardiovascular degeneration, especially in mitral stenosis, the pulse often becomes exceedingly irregular, and in the jugular the wave of auricular contraction disappears. This has long been regarded, particularly by Mackenzie, as depending upon the origin of the rhythm at the node of Tawara (hence the term nodal rhythm). Lewis (*Brit. Med. Jour.*, 1909, ii) asserts that facts are at his disposal permitting the conclusion that the rhythm arising in the neighborhood of node gives rise to a different clinical picture. This conclusion is based upon the study of an instance of paroxysmal tachycardia in which auricle and ventricle contract together. Secondly, the pulsus irregularis perpetuus is dependent upon fibrillation of the auricle. This conclusion is based upon the fact that the rhythm is exactly similar to that which may be produced experimentally by inducing fibrillation of the auricle, and is a unique condition. Lewis points to the fact that electrocardiograms taken from patients exhibiting this irregularity, show a number of irregular waves apart from the ventricular curve, and more clearly defined in diastole. Such waves are found in no other disorder of the heart action. They disappear when irregularity vanishes, are not evident upon the cardiogram, and are identical with the curves yielded by fibrillation of the auricle. Furthermore, synchronous tracings show that the waves in the experimental cardiogram correspond to the fibrillary movements of the auricle. [In connection with this interesting communication it may be remembered that Cushman and Edwards in the *AMERICAN JOURNAL OF THE MEDICAL SCIENCES*, 1907, cxxxiii, 66, arrive at the conclusion that an instance of paroxysmal irregularity was probably due to this cause.—W. S. T.]

---

**The Etiology of Beri-beri.**—The studies of FRASER and STANTON at the Institute for Medical Research, Federated Malay States (*Trans. Soc. Tropical Med. and Hygiene*, 1910, iii, 257), are based on the chemical analyses of various types of rice, and on the production of polyneuritis gallinarum, a disease analogous to beri-beri, by feeding experiments in fowls. It was first found that Siam rice, which is most often associated with epidemics of beri-beri, contains a lower percentage of fat, than either Rangoon rice or parboiled rice. Microscopic sections showed that in Siam rice the pericarp, the outer layer, containing most of the aleurone and oily material, had been removed by the process of polishing. The relation of the milling of rice to the production of the disease in fowls was then studied. Fowls fed on the original padi ale remained healthy. Of twelve fowls fed on the finished, polished rice, six developed polyneuritis. Other fowls fed on the same finished rice, plus the polishings, all remained healthy. From these experiments Fraser and Stanton concluded that the polishing of white rice removes from the seed some substance essential to the maintenance of the