

Book Reviews

Opera Scelte di Marcello Malpighi, by LUIGI BELLONI (Classici della Scienza, No. 11), Turin, Unione Tipografico-Editrice Torinese, 1968, pp. 649, illus., L. 9500.

Few Italian medical men are of more interest to English readers than Marcello Malpighi because of his intimate relationship with our Royal Society. Luigi Belloni who has for many years concentrated his attention on the rich field of Italian science in the seventeenth century, has here made a skilful selection from the most significant of Malpighi's contributions. These are presented with an important Introduction dealing with Malpighi's work as a whole, and each item has its own context revealingly explained. The whole work is attractively illustrated, using Malpighi's own drawings. Comparison with later or modern photomicrographs greatly adds to the appreciation of Malpighi's own diagrams and sketches.

Though easily accessible in the form of the *Opera Omnia* published in London and Leyden in 1686-7, and the *Opera Posthuma* published in London in 1697, and later in Amsterdam and Venice, the works of Malpighi received relatively little appreciation until the twentieth century. As so often happens, certain classic observations, such as his revelation of the pulmonary capillaries, and the eponymously-named organs in skin, kidney and spleen, have been magnified to such an extent as to obscure the figure of Malpighi the scientific thinker behind these discoveries.

Luigi Belloni, aware of this gap, realized the need for extensive translation, critical annotation and integration of Malpighi's works to fill it. He has undertaken this arduous task over the last ten years, commencing with the production of an Italian translation of the *De Pulmonibus* in 1958, and since then he has given much of his time at the Institute of the History of Medicine in Milan to a systematic study of Malpighi's works.

Professor Belloni's wide interest in the development of scientific thought in Italy during the seventeenth century greatly enhances the value of his introduction to the work of Malpighi. It is touchingly topical to hear a scientist of the seventeenth century claiming that with the aid of the lenses introduced by Galileo more had been discovered in that century than in all the thousands of years of the past. Now in this twentieth century we are making the same claim again, with even more justification; and once more this is due, at least in part, to further extension of the power of vision, this time beyond the field of the light microscope into the field of the electron microscope.

Professor Belloni links the introduction of the microscope with the upsurge of mechanico-atomistic and iatro-chemical views of physiology and pathology which were coincident. All these aspects were woven into Malpighi's scientific method.

Perhaps the most successful application of his new methods is exemplified by Malpighi's investigation of the structure of the lungs in 1660. It is most enlightening to be brought to realize that the pulmonary capillaries which today provide a subject for a routine teaching demonstration were deciphered by Malpighi with considerable difficulty. In fact in his first letter to Borelli on the structure of the lungs he expressed considerable doubt as to the nature of the rich vascular network revealed by his injections. Only in his second letter, after examining the lungs of a frog, did Malpighi reach his triumphant recognition of the nature of the vascular network as that of

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capillaries between arterial and venous blood vessels. Even then Borelli much to his embarrassment could not see them.

Similar light is cast on Malpighi's discoveries in his studies of the tongue, the organ of touch, the kidneys, glands, and polypus of the heart.

Special mention should be made of Malpighi's dissertation on embryology. Here clearly Malpighi saw that there was a rich unexplored field for microscopic study. This work has been recently analysed with the greatest diligence by Howard B. Adelman. It is, of course, of the first importance in the history of embryology. Malpighi quotes Harvey to the effect that 'the primary outlines of nature lie hidden in the depths of night, and by reason of their subtlety escape the keenest reason no less than the most piercing eye'. Nevertheless he sees on the first day of incubation, the embryo unfolding from its pre-existent form in a way that gave rise to the doctrine of preformation, and later to its perverted version of embôtement.

To those interested in the history of science, the last section of this book is of great interest. This comprises Malpighi's reply to the letter on the study of Medicine by 'modern' doctors from his colleague and bitter opponent at Bologna, Giovanni Sbaraglia. This letter, clearly directed at Malpighi, engages in a debate between the value of ancient and modern medicine which reflects the situation in most European countries during the second half of the seventeenth century. Sbaraglia praises the achievements of the ancients, and scoffs at the advances of the 'moderns' particularly those in 'detailed anatomy achieved by the microscope'. These discoveries he dubs as quite useless in the treatment of a patient. It is an old quarrel which has continued until very recent times. Malpighi replies to these accusations paragraph by paragraph with great patience and in praiseworthy-controlled language. In doing so as Belloni points out, he reveals his scientific credo. Much of this altercation smacks of sterile polemics but Malpighi's declarations of his belief in the tenets of Francis Bacon, his accurate assessment of the achievements of his own century, and his perception of the goals of the medical science of the future, reveal his qualities as a scientific thinker in a new and vivid light.

Professor Belloni's work will be cordially welcomed by all those who feel the need of an integrated presentation of Malpighi's work and outlook. It provides too a nucleus around which to set Italian medico-biological science of the seventeenth century, and is thus a most valuable contribution to the history of its country and time.

KENNETH D. KEELE

Abnormal Hypnotic Phenomena: A Survey of Nineteenth-Century Cases, ed. by ERIC J. DINGWALL, London, J. & A. Churchill, 1968. Vol. I: *France*, pp. vii, 328, illus.; Vol. II: *Belgium, The Netherlands, Germany and Scandinavia*, pp. viii, 256, illus.; Vol. III: *Russia and Poland, Italy, Spain, Portugal and Latin America*, pp. vii, 216, illus.; Vol. IV: *U.S.A. and Great Britain*, pp. viii, 174, illus. 50s. per volume (set of four, £8).

In these four volumes a number of different contributors have made a special study of the paranormal phenomena which occurred in mesmerised subjects during the nineteenth century. Somnambulism, thought transference, clairvoyance and eyeless