

## Book Reviews

WILHELM WEBER and EDUARD WEBER, *Mechanics of the human walking apparatus*, transl. P. Maquet and R. Furlong, Berlin and New York, Springer-Verlag, 1992, pp. xix, 273, illus., DM 168.00 (3–540–53541–1).

This is the latest in a series of classic works on animal and human locomotion translated for Springer-Verlag, including Giovanni Borelli *On the movement of animals* first published in 1680, and Wilhelm Braune and Otto Fischer on the *The human gait* published in 1895. This translation is made from an 1894 edition, although the original appeared in 1836, thus falling between Borelli's innovative treatise on the bio-mechanics of walking analysed by eye, and Braune and Fischer's scientific investigation illuminated dramatically by photographic studies. By contrast the Webers were restricted to confirming their ingenious locomotor experiments by accurate chronometers and telescopes.

Having observed that man can walk for longer than he can remain standing, the authors noted his capacity to adapt to soft, uneven and mountainous territory, unlike the new steam locomotives, restricted to firm, flat or nearly horizontal surfaces. By analyzing human gait accurately, they established a theory of locomotion and predicted the possibility of a walking machine moved by steam on two, four or more legs to negotiate difficult terrain; a distant hope was entertained that neither deserts nor rivers would impede its progress! This diligent work divides into four sections: (i) general considerations which influence walking, running and jumping, for example the wind and inclines, (ii) anatomical analyses of the skeleton including detailed studies of the hip, knee, ankle and lower limb muscles, (iii) physiological analyses and conclusions on a theory of human gait, and (iv) a historical survey of previous work.

The investigations are astonishing in their detail; mensuration of each vertebral body and its disc; accurate weighing of 41 muscles in the leg to demonstrate how extensor muscles weigh more than twice the flexor muscles; experiments proving that negative suction within the hip joint enables the leg to hang and swing freely in the non-stance phase of gait; measurements demonstrating why the longest step in walking is less than half the possible spread of the legs and so on. The translators, both orthopaedic surgeons, are to be congratulated for enlarging the readership of the Webers' scientific contribution, which should attract bio-engineers, many surgeons and historians of both science and physiology. It is well-produced, though somewhat expensive, but sadly the title-page of 1836 is omitted and curiously two pages of modern adverts intervene between the index and the plates.

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W. J. STEPHEN, *Primary health care in the Arab world*, Wells, Somerset House, 1992, pp. ix, 314, (0–7291–0200–9).

The delivery of primary health care has been a topic of intense controversy in the Arab world since the early nineteenth century. Apart from the influence of professional differences of opinion, discussions have been marked by nationalist and ideological rivalries, religious debates, and a general perception, among the literate sectors of society, of precipitous decline from the past greatness of Arab civilization's achievements in the field of medicine. That medical care and public health are specific responsibilities of government is a notion that quickly took root and spread, and today debates on this and related themes continue to exert considerable pressure on Arab regimes to improve conditions among the people they rule. Genuine and comprehensive progress has been especially prominent since the 1960s, as the case of almost any Arab country will readily attest. Mortality of children under the age of five (per 1000 live births) in Egypt, for example, has dropped from 301 in 1960 to 94 in 1989; the same country, which had no rural health units through the early 1950s, had 200 by 1962 and over 2000 by 1986.

It is almost exclusively this contemporary period, since the 1956 Suez war, that Stephen covers. His study is not written from a historical perspective, but rather assesses progress toward realization of the aims of the 1978 Declaration of Alma Ata, later taken up by the WHO and UNICEF, calling for "health for all by the year 2000". Primary health care systems in Algeria, Bahrain, Egypt, Iraq, Jordan, Kuwait, Libya, Qatar, Syria, the United Arab Emirates, and Yemen are all discussed in