I have not known fever of the second grade carry off the patient, unless, as in the cases just recited, it was complicated with a pre-existent morbid state of body. There might, however, be local disease, not having any bad influences, as it respects the fever.

J. B., aged 20, had disease of the knee-joint for two years, when he was seized with fever, which lasted for three weeks. The one disease had no apparent effect on the other in retarding the cure. He soon afterwards went to his work as a smith, with merely the inconvenience of anchylosis of the joint.

To form a right conception of the third degree of this epidemic in all its circumstances, we ought to suppose the patient to have imbibed a concentrated malaria, subjugating every organ and function to a typhoidal influence.

I will transcribe from my notes the case of a fine young woman, aged 20, who, when I first saw her, had been ill three weeks. Her face had the expression of subdued suffering; sordes on the lips and teeth of a deep blood colour; tongue covered by a thick and dry mucus of the same appearance. A dark shade surrounding the eyes indicated the sunken contents of the orbits; at the inner angles the veins were blue and prominent; the pupils somewhat dilated, and the eyelids half closed; alæ of the nose moved in each respiration; the expirations quite audible; crepitant rhonchus; cough, and a rusty mucous expectoration. It required considerable tact to count the pulse, as it was small, and between 130 and 140, certainly not less than 130. She at one time complained of pain in the chest, at another in her bowels. The hypogastric region was, on pressure, extremely tender. At a more advanced period of the disease this patient became deaf, and took not the least notice of anything passing in her bed-chamber. Unconscious of her danger, wants, or necessities, she was unable to appreciate the concern and attentions of her dearest friends. Thickly folded clothes were placed under her, and attendants administered to her comfort just in the same way as to the most helpless infant. She could only take fluids; as to food of any kind there was a total distaste, as also for every mental and physical enjoyment. The functions of the endermic system, being too feeble to throw off the secretions, the skin became dry. We might now view this patient at the maximum of the epidemic, and altogether a worn-out emaciated being. This case recovered, although it was three months before the enervating effects of the malady disappeared.

The vital powers in persons of advanced age were unable to contend with fever of this type.

Mrs. G. B—, aged 77, fell with fever. In the second week her arms and legs became livid; there was extensive sloughing over the sacrum, and on the fifth week she expired.

From four to six weeks generally elapsed before there was any permanent remission, when the grievous complaints of pain in the back, or limbs, or bowels, were succeeded by a profound sleep, which when undisturbed lasted from six to eighteen hours. There were instances of quiet slumber for three days. The friends of the

patient were inclined to arouse them: they were wrong; this deep sleep ought not to be interrupted, for invariably a favourable event followed. It was critical, and marked that crisis which ended in copious perspiration, grateful sensations, and an abatement of vascular excitation. Indeed, this extraordinary repose and repeated diaphoresis was not uncommonly the precursor of convalescence; the appetite at the same time returning, the physical powers were gradually recruited. Nevertheless, it was from three to four months before the health was perfectly regained.

Another distinguishing feature of the epidemic was,—that in no case which came under my observation could it be said to be ephemeral; in its mildest attacks it long held the sufferer within its grasp. We had also abundant opportunities of remarking how much a pure air, and the habits of country life, give superior powers of endurance under disease. That such circumstances should modify, if not the material of fever, yet that it modifies the effects of fever, is more than conjecture. There can be no doubt that the physical condition of a rural population, living in comparative comfort, would form a striking contrast with the physical condition and powers of endurance of persons living in large towns. Those who have been the subjects of the visitation of an epidemic, under wretchedness and privation, have their vital powers fall at the first onset. Whereas, in our neighbourhood, we have been frequently astonished at the tenacity and conservation of human existence under morbid phenomena so excessively enfeebling. When the subject of fever has been free from previous organic change, and not greatly advanced in life, the epidemic had a tendency to run its course without hazard to life. Cases in my practice have never been fatal, unless the patient at the time of the attack laboured under serious disease, or the disadvantages of old age.

(To be continued.)

ON THE EMPLOYMENT OF THE POWER OF ELASTICITY IN SURGERY.

By HENRY CLARK, Esq., F.R.C.S., Surgeon to the Infirmary, Bristol.

(Read at the Annual Meeting of the Bath and Bristol Branch of the Provincial Medical and Surgical Association, held at Bristol, July 22nd, 1847.)

I am anxious to call the attention of the members of the profession to a power which may be advantageously exercised in surgery. Although it has not been entirely overlooked, still its application has been very limited; in some of the cases to which I shall refer, I am not aware that it has ever been employed.

The power I allude to is elasticity. This principle is unceasingly exerted in the human economy. By virtue of its influence the vessels are enabled to accommodate themselves to their varying contents. By its instrumentality those slender encircling bones, the ribs,

have their integrity maintained, and are enabled to defend from any rude concussion the important organs they surround. Whenever we flex the trunk, the intervertebral elastic plates assist the muscles to restore the column to the upright posture, and afterwards to maintain that attitude without the expenditure of continual muscular effort. We walk upon an elastic arch, and every section of the bony apparatus of our limbs has more or less of elastic material interposed between and around them, so that when any member is exercised, by this agent it is greatly aided to resume its normal position. The skin and other tissues partake of its advantages; indeed, deprived of the elastic principle, life would be almost intolerable, and our movements, which are now performed with celerity and comfort, would, in the absence of this agent, become both irksome and dangerous.

I should however outstep my province were I to do more than illustrate the general use of elasticity by a few leading particulars. I have glanced at a few, that your minds may be suitably impressed with its extensive agency, and that you may be induced to set a proper estimate on the value of its influence.

We cannot accurately imitate muscular contraction; we cannot supply a principle precisely analagous to the nervous fluid; but we can supply the elastic property, and thus, in a variety of instances, help nature exactly in her own way. Nature abhors being treated abruptly. Where you cannot advantageously use coercion, you may beneficially exercise forcible persuasion. In mechanical surgery the rack and the screw I allow are powerful and useful instruments, but still they are felt as obnoxious agents, while the elastic media are recognized as the true natural allies. Vulcanized caoutchouc has this desirable elasticity, and simulates most closely this property of the living animal tissues. This is the medium that I would propose to be used. In its operation it will be found to exhibit the *fortiter in re*, and at the same time to exemplify the *suaviter in modo*—a happy combination, which in physics, as well as morals, is the great clue to the attainment of our object. By the great power of the screw or the rack we may suddenly overcome, and subsequently rigidly maintain the position gained, but it is only by occasional starts that progress is made, and there is nothing natural in the process. The elastic medium on the contrary, when once applied, is perpetually at work, and, like the drop of water that excavates the stone, not by its own inherent force, but by its unceasing action, so the caoutchouc, not by its native strength, but by its untiring exertion, is enabled to accomplish purposes which the fitful action of a stronger power is incapable of effecting. The one is an energetic sleepless sentinel ever active on duty; the other a powerful but dormant guard requiring to be aroused to efficient service; and this is not the only distinction, for the presence of the one in the human economy is viewed as that of an enemy, while the assistance of the other is regarded as that of a friend.

I would wish to be clearly understood that I do not aim to discard the use of the screw and other similar powerful mechanical instruments from surgery. There

are cases I know where these means are indispensable. I only desire to express an opinion that in numerous instances where that kind of power is exerted, the elastic principle would be more appropriate, and that to this mode the motto may be most aptly applied—

“Cito tuto et jucunde.”

Hitherto the caoutchouc has been principally used in surgery as a compressor; the novelty of my idea—if it have that claim—is in using it as a tractor, and in estimating its power in this respect at a much higher rate than others have hitherto done.

I will without entering into detail enumerate a few instances in which it has been found to act with marked benefit.

In lateral spinal curvature.

In bending rigid joints and straightening them when contracted.

In the removal of long portions of dead bone from the soft parts, and in withdrawing a sequestrum from its osseous shell.

In the removal of ligatures when they have been detained beyond the accustomed period.

In opposing the tendency of the cicatrix to contract after burns.

PURULENT OPHTHALMIA IN INFANTS.

By JAMES WHITEHEAD, Esq., F.R.C.S., Surgeon to the Manchester and Salford Lying-in-Hospital.

(Read before the Provincial Medical and Surgical Association, at the Anniversary Meeting, at Derby, Wednesday, August 4th, 1847.)

Purulent ophthalmia, as it is met with in infants, is of such frequent occurrence, and occasionally so disastrous in its consequences, that the subject will, doubtless, be allowed to possess considerable interest and importance in a medical point of view; and the uncertainty which has hitherto prevailed respecting its origin, and the means to be employed for its effectual prevention, appears to leave its history open at least to further investigation. The facts which I have to adduce are intended to bear directly upon this disputed question; and although scanty, and by no means fully digested, I am, nevertheless, emboldened to bring them under the notice of the Association on the present occasion, believing that any trifle capable of contributing to the elucidation of an obscure point in pathology, may not be deemed unworthy of being communicated.

The first indication of purulent ophthalmia consists in simple turgescence of the vessels of the conjunctiva, upon which membrane granulations are soon after seen to spring up in great abundance, and a very profuse secretion of pus ensues. This product has the property of generating a similar train of morbid phenomena on being applied to the eye, or to the mucous structure of some other organs, either of the same, or of another individual.

The inflammation is generally found to attack, in the first instance, the layer of membrane lining the