seen in spontaneous action in imbeciles; it is these muscles that work awkwardly in nervous one-sided grinning, and in this region we most commonly see asymmetry of the features, due to nerve-muscular conditions. It is interesting to note that this region of the face is the most affected by brain-disease (paralysis), and in "nervousness" (irregularity of the mobile features). Again, it is the levator labii superioris in the lower zone which produces one-sided snarling, one of the lowest expressions produced by the human face. In complete development and perfect health the features are usually regular in passive form and in symmetry of movement. In most expressions, the symmetry of bilateral movement is complete; from this we infer that the nerve-mechanisms for each side of the face are intimately connected.

In observing how easily facial asymmetry is brought about, we see evidence that the union of the facial centres is easily dissolved and not very strong, the asymmetry being especially seen in the lower zone; thus asymmetry is produced by nervousness (see one-sided grinning), by the desire to attack (see *Darwin on the Expression of the Emotions*, page 250) (snarling), or by such defective nutrition or development as produces unequal features when in motion. The higher, more intelligent expressions are symmetrical. Union of the facial centres is less perfect than the union between the motor centres of the eyes, for the cerebral condition producing "emotion" cannot cause dissociated movement of the eyes. We find here an illustration that symmetry of action, as well as symmetry of structure, is part of the law of beauty.

It may be remarked as a peculiarity of the facial muscles in man, that they are usually free or disengaged, not mainly occupied in doing a definite work, but their movements are mainly the spontaneous outcome of brain-action. The facial muscles are usually very mobile, and often illustrate the struggle of nerve-muscular actions; this may be seen in the conflict of the muscles about the mouth in the endeavour not to cry. The study of nerve-muscular signs in the limbs shows the importance of observing whether "the movement of small parts"—*e.g.*, the fingers—be thoroughly good; this kind of observation in the facial region is, I think, represented by "the finer movements of expression". These are totally absent in some cases of paralysis agitans, although the larger movements of the face can be voluntarily performed. When fatigued, the brain does not act well in producing the small fine movements of either hand or face. We sometimes see a nervous play of the features; this, I imagine, depends upon slight irregularity of the muscles producing slight movements. In convulsion, both clonic and tonic, and in tetanus, the larger muscles usually produce the most marked effect.

In observing different types of face, we become at once struck with the fact that some faces express intellectuality, others vulgarity; some faces are very mobile and very expressive, others are passive and immobile.

The peculiarity of vulgar faces may be roughly divided into two elements. 1. Physiognomy or the shape of the brain-case and face, together with the character of the facial tissues, and the structure of the features and parts of the face. Here, probably, we have an example of the coincident defective or coarse development of the face and the brain.* This illustrates the relation of morphology and function, the structure of the face, and the coincident structure and function of the brain which moves the face. Elements contributing to this character of face are a large under jaw, a thick immobile condition of the facial skin, thick lips, etc. It will be seen that these are mainly conditions in the development increasing the protective character of the skin of the face; the thick immobile tissue is better able to resist the action of external agencies, but it is also less mobile under the action of nerve-muscular changes. The large lower jaw may be very useful for mastication or defence, but it does not serve to increase the play of nerve-muscular actions.

2. The second typical characteristic is the nerve-muscular condition of the face. Such signs are more directly indicative of intellectuality of the brain; hence we should study a face as the index of the brain, when it is seen in action as well as when at rest. The mobility in the different zones and the relative condition of these areas give indications of the condition of the mental nerve-mechanism. These considerations afford some evidence that facial expression results from nerve-muscular action, the outcome of the motor action of that part of the nerve-mechanism which produces mental states.

* See "Defective Developmental Conditions", *Medical Times and Gazette*, Jan. 21st, 1882. Coincident defects I there show to be common.

NEW HONOUR FOR MEDICAL PRACTITIONERS.—The *Chicago Medical Review* reports that a sapient member of a Southern State legislature has introduced a Bill, providing that in case of death from disease or injury, the name of the physician, who had attended the deceased during the last illness, shall be placed upon the tombstone.

A CASE OF SPINAL HEMIPLEGIA FOLLOWING GANGRENE OF THE RIGHT GREAT TOE.

Read in the Section of Medicine at the Annual Meeting of the British Medical Association in Worcester, August 1882.

BY AGMONDISHAM VESEY, M.B., MAGERAFELT.

A GENTLEMAN, aged seventy years, for about three months complained of severe pains in both calves, and of burning sensations in both feet. To alleviate these, he frequently bathed his feet in cold water. Previously he had always enjoyed excellent health, and, as he said, had never given a fee to a medical man on his own account. He indulged occasionally somewhat freely in the use of ardent spirits, but, as a rule, was most temperate.

On May 18th, 1882, he put on a pair of shoes which were rather tight for him, and walked five or six miles. This was followed by severe pains in both feet, the tops of the great toes being especially affected. He pared the nails very closely, and instead of the pain being alleviated it increased, and a purple spot formed at the base of the right great toe, with swelling and redness of the dorsum of the right foot.

On May 26th, he first consulted me. The right great toe was purple and cold, and the rest of the foot swollen, red, and shiny. The pain was stated to be almost unbearable in both feet, and though more agonising in the left foot, there was no swelling or discoloration. The tibial arteries in both sides were permeable, and there was no evidence of thrombus here or elsewhere. There was also pain and stiffness in the ring and little finger of the left hand; sensation normal.

On May 29th, the right great toe was unmistakably gangrenous; the superficial veins of the right forearm were hard, cord-like, and filled with clots. There had been no pain complained of in this region. Elsewhere, the veins were quite pervious and normal to the touch. A gradual improvement took place until June 16th, when I detected a systolic bruit in the heart. The condition of the veins of the right arm were the same, and there was no apparent change in the left hand. He had a fair appetite, full control over the bladder and rectum, and no distress in breathing.

On June 17th, in the evening, the left arm was found to be completely paralysed. There was no paralysis elsewhere. There was full power of flexion and extension in the left leg; but though he said it was feeling colder than the other leg, the temperature was not below par except in the foot. The nose was purple at the tip and cold up to the base. Large distended veins were visible here, which were not to be seen previously.

On June 18th there was complete paralysis of the left arm and leg. There was no facial paralysis, and no paralysis of the tongue. Speech was distinct and articulate—no ptosis, no deafness, no difficulty in swallowing. The muscles of the left arm felt flabby and doughy. The breathing was more rapid but not laboured, and the condition of the cardiac murmur was unaltered. He had full power over both bladder and rectum. The right side of the body was found to be anæsthetic: pinching the skin or pricking it with a needle gave no pain. The pain from the gangrenous toe ceased to give any trouble, though previously large doses of morphia were required to keep it in check on his toe with a spoon dipped in hot water.

Hyperæsthesia, too, was noticed on the left side, but not to the same extent as the anæsthesia on the right side. It was confined to the upper part of the thorax, the upper arm, and the shoulder. Owing to continual presence of anxious relatives, who were most strongly opposed to my trying what they called any "experiments," I was unable to satisfy myself as to whether any band of anæsthesia was to be found at the upper border of the hyperæsthetic region, or whether the hyperæsthesia extended to parts below those I have mentioned. All I can say is, that pain of a more excruciating character than before was felt in the left leg and foot.

The patient gradually sank, and became comatose four hours before death on June 19th. No other paralysis supervened. No *post mortem* examination was permitted.

The comparative rarity of spinal hemiplegia must be my apology for bringing this imperfect report before the Section. Owing to the causes stated, I am unable to give any information as to the condition of the reflexes, or as to the diminution or abolition of the common or special sensibility (muscular sense) of the paralysed muscles. The absence of a *post mortem* examination makes it impossible to state with accuracy the exact seat and cause of the lesion. That it was probably situated in the cervical enlargement of the spinal cord, and was caused by softening,

due to an embolism of a segment of the left half of the cord, appears to be the least doubtful event.

Briefly, the points of interest in the case were these:—1. The tendency to formation of blood-clots; 2. The development of a cardiac murmur (thrombosis); 3. The paralysis of the left arm alone first; 4. The sequence of complete spinal hemiplegia on the next day; 5. The absence of any form of cerebral paralysis; 6. The general anæsthesia of the right side; 7. The limited hyperæsthesia of the left side; 8. The rapid ending of the case within thirty-six hours of the completed paralysis of the left half of the body.

At first the case seemed to me to be a case of cervical paraplegia, but the rapid sequence of events just described presented to me an almost typical case of spinal hemiplegia.

REPORTS OF SOCIETIES.

MANCHESTER MEDICAL SOCIETY: MICROSCOPICAL SECTION.

JULIUS DRESCHFELD, M.D., President, in the chair.

Tuberculosis, resembling Perlsucht.—Dr. Ashby exhibited microscopical specimens, and also the organs, from two cases of tuberculosis in children, resembling "Perlsucht." The patients' ages were 8 and 6½ years respectively. The characteristic lesions consisted of numerous sessile, pearl-like tubercles on the costal pleura and peritoneum, in the latter case situated more especially between the diaphragm and liver, and between the former and the spleen; and of tubercular and cheesy mesenteric, retroperitoneal, mediastinal and cervical glands. In one case, the lesions in the lungs consisted of clusters of recent grey and yellow tubercles situated around the bronchi, there were also tubercular meningitis and optic neuritis. In the other case there was much iron grey consolidation, fibroid changes, cavities of small size filled with cheesy matter, and, in the more healthy portions, miliary tubercles. Tubercular ulcers were also found in the intestine. It was stated that in neither case was there a family history of phthisis, and it was pointed out that it was the lymphatic system that was specially affected. In both cases there was extensive tubercular disease of the glandular structures, involving mesenteric glands, extending along the thoracic duct to the neck and affecting the cervical glands. The sessile pearl-like tubercles of the peritoneum and pleura were apparently connected with the lymphatics. This state of things was suggestive of an infection derived from the food, and most probably from milk. The microscopical appearances were those of ordinary tubercular disease, including numerous "giant-cells."

Tubercular Arthritis.—Mr. A. H. YOUNG showed a preparation, together with sections of the bone and synovial membrane, from a case of tubercular disease of the hip-joint. The patient, a man aged 38, had suffered from hip-joint disease for about one year, when symptoms of acute tuberculosis developed themselves. *Post mortem* examination revealed the lesions of general tuberculosis. The right hip-joint contained a small quantity of blood-stained purulent fluid, mixed with broken down *débris*. The synovial membrane was greatly thickened and pulpy; the articular cartilage, both of the head of the femur and of the acetabulum, was eroded, and almost entirely detached from the subjacent bone. Section of the head of the femur showed the cancellous tissue infiltrated with caseous-looking material; but no tubercles were discernible by the naked eye. Microscopically, both the synovial membrane and the medullary tissue of the head of the femur presented tubercle granulations and giant-cells.

Secondary Sarcoma of Lungs.—Mr. A. W. STOCKS exhibited sections of sarcomatous nodules from the lungs of a patient, who, in August 1877, suffered from a large pulsating myeloid sarcoma of the lower end of the femur; for which amputation, about the junction of the upper and middle thirds of the shaft, was performed. The patient, a woman, made a good recovery; but, early in 1880, complained of chest symptoms (cough, hæmoptysis, etc.). She died in May 1881. Apparently, there was no local recurrence of the tumour; but the inguinal glands, on the sides operated upon, were considerably enlarged. The lungs contained numerous round nodules of various sizes, which, on microscopic examination, were found to present the characters of small rounded sarcomatous formations.

Epithelioma of Prepuce and Inguinal Integument.—Mr. Stocks showed also sections from a case of epithelioma of the prepuce. In this case there was also an epitheliomatous growth, about three inches long by one broad, in the right groin, apparently affecting the skin only, the inguinal gland being in no way involved. The inguinal growth was said to be primary.

Leprosy.—The president showed organs and sections from a case of leprosy. An account of this case will be published separately.

REPORTS AND ANALYSES AND DESCRIPTIONS OF NEW INVENTIONS IN MEDICINE, SURGERY, DIETETICS, AND THE ALLIED SCIENCES.

NEW ABDOMINAL BELT.

THIS belt, of which the annexed illustration is a fair representation, is an improvement on one designed by Messrs. Salt and Son of Birmingham some years ago, which was favourably commented upon and met with much approval.

The improvement consists principally in the substitution of a single for a double environment of the patient's body by the semielastic fabric, and in the adoption of a mode of fastening which enables the belt to adapt itself automatically by a compensating movement to all changes in the posture of the wearer, in a manner somewhat similar to ordinary French braces, while the principle of causing the elastic fibres to correspond in direction with the abdominal muscles is rigidly preserved.

The belt consists of two sections—anterior and posterior—of nearly equal length; the anterior, which is composed of India-rubber threads interwoven in the usual way with silk or cotton according to quality, is much the deeper of the two, and is shaped accurately to fit the configuration of the figure, and supported by a central vertical strip of whalebone and two lateral strips, which diverge from each other at a slight angle from below upwards. The posterior section, which, as has been stated, is shallower than its fellow, is made partly of elastic and partly of inelastic material, a sufficiency of stout bones being introduced to afford the requisite dorsal support and to prevent "rucking".

The connection between the two parts when in use is unique, and forms the greatest improvement noticeable in the appliance. On each extremity of the posterior half of the belt are firmly affixed two metal loops, having on their anterior aspect small tubular rollers or pulleys; through these loops, and resting upon the pulleys, pass the ends of four straps, which originate in the front half of the belt, and after passing through the loops are reflected so as to fasten to buckles placed well to the front on the straps themselves. The lower straps are deep, and curved so as to follow the abdominal lines and afford support over the epigastric region; the upper is narrower, and almost horizontal in direction.

The following, among other advantages are claimed for these belts.

1. The buckles, being placed well to the front, can readily be fastened by the patient herself—a manoeuvre somewhat difficult of accomplishment with ordinary belts if she be feeble or obese.
2. The straps, sliding over revolving pulleys, yield readily and without effort to every movement of the body.
3. The additional power given to the traction of the finger by causing the straps to pass over pulleys enables the belt to be drawn to the requisite degree of tightness with half the effort needed without this assistance.
4. Adequate provision is made for gradual enlargement when the belt is ordered to be worn during pregnancy.

THERE were, according to the *Chicago Medical Review*, two hundred and sixty-seven medical works published in Japanese in Japan during 1881.