of all possible irritants was made, with the following findings:

The "dry shampoo" contained approximately 50 per cent. water and 48 per cent. alcohol. There was a heavy deposit of a gritty nature present which proved to be almost entirely potassium carbonate. Small quantities of colouring matter and scent were present also. It is to be noted that no pyridine was present. The bottles are of necessity shaken before use, and it may be concluded that the deposit is evenly shaken throughout the mixture and would therefore be inoculated into the hands were any fissuring present. It is worthy of note that the relative concentration of alcohol and water is such as to precipitate crystals of potassium carbonate. These are palpable in the lotion for a few seconds when rubbed on the hand until the evaporation of alcohol allows them to redissolve in the water. Under the microscope they are seen to be sharp and needle-shaped. Experimental inoculation of these crystals into the hand of a non-sensitized person did not give rise to any irritation except such as is to be expected after the application of alcohol to injured skin.

An analysis of the various "frictions" used showed that one of them contained the following irritants: Pyridine, 0.49 per cent. of the total mixture, and 25 per cent. of the residue after evaporation on the water-bath. Also traces of arsenic and aniline colouring matter.

It appears that the use of pyridine is very common in Continental spirit, and it is likely that the cause of the trouble lay in the use of spirit containing this denaturant by the manufacturers. Evaporation of the particular "friction" referred to above left a residue which was largely composed of pyridine and gave rise to irritation of the skin when rubbed in. It is realized also that when the friction is applied to the scalp the evaporation of the alcohol will result in a further concentration of the irritant material.

I am indebted to Dr. Savatard and Dr. Gibson of the Manchester and Salford Skin Hospital for permission to report on three of the cases which came under their notice, and to Mr. H. C. Taylor for the analysis of the materials employed.

REFERENCE.

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COMMON MISTAKES IN THE TEACHING OF PHYSICAL TRAINING.

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Now that forms of exercise and physical training are applied and used in colleges, schools, etc., the following remarks on the breathing exercises might be of interest, especially as medical officers are entering more and more into matters of education and school life.

Breathing Exercises.

A clear distinction should be made between a pure breathing exercise and an exercise designed to exercise the muscles of the chest. A pure breathing exercise should, of course, be performed without any movements of the arms or other parts of the body.

In deep breathing the arms should hang loosely by the side, and the muscles of the body be relaxed, in order that the diaphragm may descend to the utmost, and that the capacity of the thorax may be increased to its fullest extent unhampered by any other muscular movement. The abdominal muscles especially should be relaxed. The severe restriction to breathing which takes place when the arms are moved and the head pulled back can be watched by anyone.

Exercises designed to develop and train the muscles of the chest should be called "chest exercises."

The Straight Spine.

It has been taught that the ideal spine is the "straight" spine. This word "straight" has led to considerable confusion in the teaching of gymnastics.

The medically straight spine is the one which gives an erect carriage to the body, has all its natural curves in

correct proportion to one another, and is quite free from any lateral curve. In the other form of straight spine the word has been taken in its literal sense. This faulty spine is illustrated in diagrams and described in words as being as straight as a chimney stack, and free from all its natural curves; the vertebrae are piled up on top of one another like a child's single column of twenty-four bricks, the sacral and coccygeal curves only being shown. This, of course, is not meant by the word "straight."

It is wrong to tamper with or over-correct the normal curves of the spine, the danger being that abnormal curves are produced elsewhere. Mackenzie, writing of the bantam or pouter pigeon type of chest, in which the chest becomes pushed forward and upward, and the lower spine over-extended, forming a marked exaggeration of the natural lumbar curve, says: "This posture is always the result of faulty teaching, and is an exaggeration of the correct standing posture caused by the mistaken efforts of the teacher to over-correct faults" (namely, the "round back" or "gorilla" type).

If an abnormal curve is present then the patient should be transferred from physical training or gymnastic instructors to the care of the doctors.

Leg Exercises.

Confusion has also arisen as regards leg exercises.

It has been taught that after heavy exercises leg exercises "deflect the blood" from the heart, and so ease the heart and diminish the pulse rate; that leg exercises stretch blood vessels, and so the legs contain more blood; and that they have a "calming effect" on the pulse and respiration after heavy exercise. All of this is incorrect.

Writing on leg exercises Pembrey says:

"My chief criticism is that there appears to be prevalent a wrong idea of the physiology of respiration and circulation. Thus some exercises are commended because they are thought to stretch the large blood vessels and increase their capacity. It is apparently forgotten that most of the large blood vessels are placed so near the bones that little or no stretching can take place even if stretching were desirable."

A man after cross-country running has had a surfeit of leg exercise, and his legs have as much blood in them as they can hold. Another leg exercise imposed on him now can only have one result—the state of rapidity of his pulse and breathing are prolonged, which is a point to be guarded against.

Memoranda: MEDICAL, SURGICAL, OBSTETRICAL.

DIRECT FRACTURE OF CLAVICLE WITH SYMPTOMS SIMULATING CERVICAL RIB.

WE recently saw a boy who had been knocked down by a motor car. He had halted on a dark evening by the side of the road on the edge of the sidewalk, and was stooping well down, engaged in trying to light his bicycle lamp, when he was hit by a motor and tossed on the sidewalk. When lifted up he was unconscious, and his bicycle only fit for the scrap-heap. He was taken to the surgery of a near-by medical practitioner, who set his broken collar-bone and directed his friends to take him to his home.

He was seen by one of us on the following day; he was still unconscious and the temperature was raised. As the collar-bone seemed to be doing well the adhesive plaster was not removed till the fifth day; it was then impossible to ascertain whether he was hit on the point of the shoulder by the radiator or mudguard or not. An ordinary oblique fracture of the clavicle just external to its middle presented itself. Behind and above the clavicle, in the posterior triangle of the neck, was a blunted swelling. It was slightly movable, painless on pressure, and pointed obliquely upwards and outwards.

On the opposite side of the neck a small blunted swelling was to be felt. We came to the conclusion that it was a case of a cervical rib, springing from the anterior limb of the transverse process of the seventh cervical vertebra on the right side, and that there was a corresponding small attempt at one on the left side.

The general appearance of the boy almost forced one to consider that there was some abnormality. He was