soften all the cold water used domestically in the asylum, but this is not necessary so long as the boilers, laundry, and hot water are thus treated.

Finally, in the long list of alterations undertaken by my enlightened and progressive Committee, new stores and offices, a new entertainment hall, and a new board-room were built in 1911, and I think the stores, too, are worthy of a visit from those interested in administration, and if further proof is necessary that we are not stagnating, bricks and mortar are actually now being laid to add to our kitchen amenities, and other minor additions.

Ladies and gentlemen, in concluding my review of the history of the insane during the past century, together with an account of this hundred-year-old asylum, I desire to thank you for your patient hearing, and claim your forgiveness for, I am afraid, many omissions. Throughout, my difficulty has not been material, but the limited time available in which to address you.

The Wet Pack in the Treatment of Insomnia and Mental Disorders. By H. RAYNER, M.D.Aberd.

THE wet pack was first systematically used by Lucas, an English physician, in 1850. His description of its use is on record prior to that of Preisnitz, the German hydrotherapist, to whom the credit attaching to its introduction has been generally ascribed.

The wet pack has continued to be used extensively in hydrotherapeutic institutions, and counts as one of the most important and successful means of treatment. It has, however, not received much attention in general hospitals, and is comparatively rarely used therein.

In English asylums it was introduced by Dr. Boyd and Lockwood Robertson as early as 1860, but for many years past it has practically ceased to be used in these institutions.

Process of Packing.

The process of wet packing is generally described in most handbooks on nursing, so that a repetition of the ordinary technique is unnecessary ; but although the general outline of

packing is given, this is unaccompanied, as a rule, by any of the warnings that are necessary to avoid marring the effects, neglect of which may make its use harmful rather than beneficial. These precautions may be better dealt with after a review of the physiological action of the wet pack.

Physiological Action, etc.

Schuller experimentally used the wet pack in trephined rabbits. The principal observations that he records are that the temperature of the body sank one or two degrees at first but began to rise after two and a quarter hours, that the respiration became more slow and deep, and the pulse less frequent.

He also observed that the brain sank more and more, its movements becoming slower and more equable. The vessels of the pia mater after a primary dilation again contracted, whilst the dura-mater became raised by an accumulation under it of cerebro-spinal fluid. These conditions lasted several hours, passing away on the cessation of the pack.

The first effect of the application of cold in the wet pack is a reflex excitation of the cardiac and respiratory centres, accompanied by contraction of the cutaneous vessels. This latter result necessarily drains a large amount of blood into the cerebral and abdominal vascular areas, the stimulation of the nerve centres causing it to circulate with increased pressure and rapidity. Hence the primary dilation of the pial vessels as described by Schuller.

In this first or "cold" stage, M. P. Jacobi suggests that the increased rapidity and pressure of the blood circulating through the nerve centres tends to their depuration of waste or toxic matters.

The shock of the cold in this first stage is commonly accompanied by shivering, and gasping respiration, lasting a variable time. The rapidity with which this is overcome depends on the age and health condition. Rapid reaction is favoured by a previous high temperature, and may be accelerated by a previous hot air bath or dry rubbing, or, in the vigorous, by taking active exercise.

The second stage of reaction is brought about by the excitation of the respiratory, circulatory, and heat regulatory centres,

resulting in a dilation of the cutaneous vessels, partly by reflex action, and partly from the local demand for heat, as well as by the general increased production of heat from the stimulation of heat-producing changes in the muscles throughout the body. The chilling effect is thus counteracted more or less speedily, and the temperature of the body and of its surface rises, and tends to continue rising unless checked by evaporation.

The skin, as a result of the reaction, becomes so filled with blood, and the heat production is so great, that after some time the sheet will steam on the removal of the covering blankets. This evaporation tends to check the rising temperature, and hence, as soon as this rises to the normal the outer blanket covering should be reduced or removed. In this way, perspiration and elimination are favoured. By neglect of attention to this procedure, by the continuance of the blankets, or the addition of waterproof covering, the temperature may be unduly raised, and the whole effect of the packing defeated.

The elimination of toxic matter through the increased perspiration is one of the most important results of the packing. Max Herts (of Vienna) asserts that the soaked epidermis not only radiates heat more readily than the dry skin, but also permits of greater elimination.

This elimination by the skin is commonly observable in the strong odour of the perspiration, and Zeigelroth (*Deutsch. Med. Zeit.*, 1887) detected toxins in the perspiration induced by the wet pack.

The waste of cuticle is also greatly increased, thereby favouring the elimination of some of the most insoluble excretory products of the body.

Toxic matters, in addition to elimination by the skin, are also more largely oxydised, being converted into more soluble, and consequently more easily excreted products, owing to the increased activity of the circulation, and to the greater heat production, resulting from the wet pack.

Bouchard's observation, that men afflicted with offensive sweat secretions lost them during febrile conditions, favours this view. He attributed the curative effect of fevers in many chronic states of toxic origin to this increased activity of metabolism.

That the wet pack acts in a similar way by increasing the

cellular combustion throughout the body, is rendered probable by the more active urinary secretion, and the promotion of the bowel action.

The derivation, in the second stage, of so large an amount of blood to the skin area, and the soothing influence of the pack on such an extensive peripheral nerve area, favour the production of sleep, many persons falling asleep whilst still in the pack, or so immediately subsequent to removal from it, that there can be no doubt that this is one of its most constant and important physiological results.

The beneficial effect of the pack, and of the sleep induced by it, are so well known that they need no repetition. In febrile states they are evidenced by reduction of temperature, and increased tone of circulation; by relief of symptoms in toxic conditions, and by general improvement in sleepless, exhausted, or excited nervous states.

The general improvement in nutrition is widely contrasted with the disorders and defects thereof, following the use of narcotics.

This general improvement has been very strikingly demonstrated by Maggiora (Venay, and Maggiora, *Blätter f. Klin. Ther.*) in the results on the muscular system, who showed that the lifting capacity was considerably increased after a wet pack. When a cold dip followed the pack the lifting capacity was fully doubled.

Baruch, therefore, advises that the "tone" of the cutaneous vessels should be restored after the pack by a half-bath, a sheet-bath, a cold ablution, or the circular bath and douche of 70° to 80° F.

Light massage, especially *effleurage*, is of special service for this end.

When the pack is given at bedtime to induce sleep, these tonic procedures should be deferred until the morning.

The Technique of Wet Packing.

The method of application of the wet sheet is to be found in every book on nursing, but there are certain details that require especial attention.

The speed with which the wet sheet and wrappings are applied is a very important point, greatly affecting the quickness and thoroughness of reaction.

The complete exclusion of air beneath the blanket cover, Baruch asserts, is of the utmost importance—on this, he says, “everything depends.”

The application of warmth (by hot water bottles, etc.), to the feet, especially during the cold stage, is also often of great importance ; and equally important is the application of cold to the head by clothes, etc., in the stage of reaction.

The temperature of the water out of which the sheet is wrung should be carefully regulated by the medical attendant to the reactive capacity of the patient.

The medical attendant should himself observe, in the first packing, the circulatory effects, and be prepared to administer a stimulant in case of any extreme depression.

The duration of the pack has also to be carefully judged in relation to the object to be obtained, and to the vigour of the patient.

The extent of the packing must be regulated on similar conditions. The whole pack, including arms, neck, and feet, may be reduced to the body pack (leaving out arms and legs), the abdominal pack, or even to the packing of both or one leg, which may be sufficient to induce sleep in some cases.

The thermometer may be used with advantage to guide the amount of the blanket covering. The normal skin temperature is the guide in this procedure. Flushing or copious perspiration of the head and face indicates a need of cold to the head and lessened blanketing, while coldness of the feet points to the need for increased covering, etc.

The ill-effects of covering the blankets with a water-proof material has been already dwelt on.

Therapeutic Use.

The use of the wet pack is obviously contra-indicated in cases in which the increased pressure of blood in the brain and viscera is likely to be detrimental, as in cases of vascular degeneration, etc.

In cases of feeble circulation it is contra-indicated, owing to the great derivation of blood to the skin. Hence, in organic heart disease, or even in functional weakness, it should be used only in a limited measure, and with great caution.

Ringer, in Tuke's *Dictionary of Medicine*, says that packing

is contra-indicated in the mania of general paralysis and epilepsy, and in acute primary dementia (anergic stupor). Other authors have barred its use in neurasthenia, hysteria, and allied states.

My personal observation is that it may be employed with advantage in many neurasthenic and hysteric cases, but only by using it to a limited extent. In some cases of neurasthenia the packing of one leg may be quite sufficient.

General Experience.

The wet pack since the days of Preisnitz has continued a most important aid in treatment in all hydro-therapeutical establishments: and the testimony of its usefulness in the treatment of many forms of disease is so well known that it need not be emphasised.

With regard to its use in mental disorder the experience of a few capable observers may be quoted.

Dr. Boyd in 1862 at the Somerset Asylum reported "that the wet sheet packing has proved of great utility in producing sleep" where opiates had failed.

In several instances the relief was immediate, in which excitement, restlessness and want of sleep had continued for several days resisting all narcotics. The patients fell asleep in the pack, becoming more manageable, and more disposed to sleep afterwards.

Dr. Lockhart Robertson (*Journ. Ment. Sci.*, vol. vii, p. 261) writes of the wet pack as "a therapeutic agent in the treatment of mental disease, readily applied to the most resisting, capable of soothing and calming the most violent, and yet so safe in its use that, in experience extending over eighteen months, I have not seen one instance in which I regretted its employment."

He considered it calmative rather than eliminative, although it is noticeable that of the seven cases of active mania which he records, two were suffering from suppression of the menses, one from climacteric and drink, and one after large use of narcotics—cases in which markedly toxic conditions presumably existed.

He observed that while the sleeplessness of recent mania persists, in spite of poisonous doses of the most powerful

narcotics, he, like Dr. Boyd, often found maniacal patients fall asleep in the wet pack.

Dr. Robertson evidently used the pack very persistently, since he remarks that after several weeks' treatment an eruption of boils sometimes occurred, followed by amendment.

Dr. Foster, in the report of the Washington (D. C.) Hospital for the Insane in 1896, writes that two years of almost constant use of the cold pack has demonstrated its value in many forms of cerebral disorder. He found it useful in cases of paresis, in acute maniacal attacks, and melancholia.

Scope of Use in Asylums.

From recorded observations, and from personal experience, the following classes of cases would appear to be most favourable for its therapeutic employment in asylums:

(1) In acute delirious mania, of sthenic type, with continued insomnia. It constantly succeeds in producing sleep when narcotics have failed utterly; also in mania of sthenic and active type.

(2) In insomnia accompanying mental disorder, with associated toxic conditions, whether of melancholic or of maniacal type.

Climacteric and gouty conditions, alcoholic and drug habit cases are specially benefited.

A mode of treatment which is certainly of great service in the treatment of some forms of mental disorder, of insomnia, and of many bodily disorders which are found in the insane as well as in the sane, would seem to be especially advantageous for institutions for the insane. It is therefore all the more remarkable that these institutions, so far as can be learned from their reports, very rarely employ this mode of treatment. So little is it used that a physician attached for some years to one of the largest and most up-to-date asylums assured me that he had never seen it employed.

This vanished employment of wet packing in asylums is almost certainly due to its being classed as a form of restraint. The regulation of 1872 enforcing the record of wet packing was certainly not intended to produce this result, but only to check its abuse as a method of veiled mechanical restraint.

The Lunacy Commission has been always most punctilious

in avoiding any interference with legitimate therapeutical methods, yet the use of the dry and wet pack is still considered as a method of restraint in their revised regulations of 1913.

These regulations demand still further consideration and it may be hoped that, whilst preventing the abuse of wet packing, they may be so framed as to encourage its employment as one of the most important and valuable means of treatment of the insane.

The Wassermann Reaction, and the Male Insane.
(Essay for which was awarded the Bronze Medal of the
Medico-Psychological Association, 1914.) By J. C.
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INTRODUCTION.

PRIOR to the discovery of the Wassermann reaction it was practically impossible to obtain a correct estimate of the incidence of syphilis amongst the insane, owing to the infrequency of physical signs in specific cases, and the difficulty of obtaining reliable histories. Experience has shown that in a large number of cases a positive Wassermann reaction with the serum may be the only evidence of syphilitic infection; moreover, Dr. Mott (*Archives of Neurology and Psychiatry*, vol. vi) has shown that definite skin lesions are comparatively rare in general paralysis of the insane.

It is generally accepted that a positive Wassermann reaction on the serum may be regarded as specific evidence of syphilis, if leprosy, trypanosomiasis, and a few other diseases of rare occurrence in this country be excepted, and the test, therefore, affords an invaluable aid for the diagnosis of syphilis in cases presenting no physical signs. At Dr. Mott's suggestion I have directed my attention to the application of the test to the serum of cases admitted to Cane Hill Asylum.

Altogether over 550 specimens of serum have been examined, and 65 specimens of cerebro-spinal fluid obtained by lumbar puncture have been submitted to the test. The tests have been applied to the following cases :