opened a large pelvic abscess. The patient subsequently died, having been bed-ridden for a year. Of course it will be urged that we can never be absolutely certain of the condition of the annexa; probably not, but all I maintain is that we recognise where the element of danger lies, and by patient examination reduce the risk to a minimum. The three following rules are worth attention:

1. That the diagnosis of all pelvic and most pelvi-abdominal conditions should be made slowly and gently with the unaided hands, and upon the examination thus made the practitioner should train himself to rely.
2. That no mechanical aids to sight or touch should be employed, except under exceptional circumstances.
3. That as a large proportion of the risks and accidents attendant on minor gynaecological operations are due to a want of appreciation on the part of the physician of the condition of the uterine appendages, no operation, however trivial, should be undertaken until their state and relations have been ascertained with as much accuracy as possible.

III.—DREAMING.

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(Continued from page 624.)

PART II.

The causes capable of giving rise to activity in limited areas of the cerebral cortex insufficient to awaken the sleeper, but adequate to arouse ideas and to cause dreams, may be divided into three groups, in the order in which it will be most convenient to consider them—1. Cerebral activity instigated by sensory stimuli; 2. Activity inherent in the psychical centres, maintained either by erethistic or adynamic conditions; 3. Activity excited by an altered blood supply.

1. Activity instigated by Sensory Stimuli.—The essential characteristic of nervous structure is that it is responsive to suitable stimuli. Acephalous animals (Landois has compared an animal asleep to one deprived of its cerebral hemispheres) exhibit reflex functions, as well as those possessing highly organized brains. Excitations are transmitted from the peripheral cells to the brain during sleep, just as they are during waking, although in a languid and imperfect manner. When these are of moderate intensity they may not be perceived as sensations, but they may suffice to arouse activity in the psychical centres through the medium of the sense organs. Light, for example, by stimulating the visual centres may excite secondarily molecular activity in
the psychical areas, and so induce dreaming. The subject of the

dream may be determined or biased by the sensory organ first

stimulated, and also by the particular stimulus applied. The

sensory organs appear to be able, even during sleep, to discriminate

varying kinds of stimuli. This capacity differs considerably in

different individuals, for great diversity exists in the perceptive

powers of waking persons. Dreams, consequently, are apt to be

influenced by the nature of the causes instigating them. Hobbes

wrote:—"Seeing dreams are occasioned by the distemper of some

of the inward parts of the body, divers distempers must needs

cause different dreams"—a dictum that will be approved by all

who believe that "there are no accidents in Nature."

Sensory excitation, by exciting activity in the sense organs,

are productive of an increased cerebral blood supply. Mosso con-

ducted upon three persons (in each of whom a portion of the skull

was wanting, which permitted the movements of the brain to be

felt through the scalp) a series of observations connected with the

cerebral circulation during sleep. By means of special instru-

ments he took tracings of the movements of the brain and thoracic

walls, and of the pulsation of the heart, and of the radial artery at

the wrist. By the aid of the plethysmograph he estimated and

registered the quantity of blood in the forearm and hand. He

showed that all stimulations, however slight (insufficient to awaken

the sleeper), such as a ray of light falling upon the eye, a noise, etc.,

are attended by contraction of the vessels of the forearm, an

increased blood-pressure, and an augmented flow of blood to the

brain. These changes are accompanied by a modification of the

respiratory rhythm, and by an acceleration of the pulsations of the

heart. More recently, Drs Roy and Sherrington, who conducted

experiments with a view to determine the "vertical thickness of

the cerebral hemisphere," found that stimulation of the sciatic or

other sensory nerve always produced expansion of the brain,

beginning immediately after the onset, and lasting a variable

number of seconds after the excitation was withdrawn. They

write:—"The increase in the volume of the brain which results

from stimulation of sensory nerves is mainly if not entirely due

to passive or elastic distension of its vessels as a result of a rise of

blood-pressure in the systemic arteries." It is, indeed, through

this mechanism that sleepers are warned of danger, and that their

safety is secured. 1

1 In animals there is usually one sense which is developed to a greater

extent than the others. It seems probable that it is through this particular sense

—that is capable of being more quickly aroused into activity than the rest—

that animals are warned of danger during sleep. It is an arrangement

designed for the preservation of life. In man this is not very noticeable, as

his senses are modified materially by education; but even in his case the centre

for touch seems not to sleep so soundly as the others, and to respond more

speedily to impressions, so he is most easily awakened by excitations acting

upon it. Civilisation has done much to deepen sleep. Savages and most

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(a.) Vision.—A bright light falling upon the eye may give rise to visual dreams. Radestock thought that it might cause, in pious men, dreams of celestial glory, for dreams are much biased by the quality of the man. In the residenters in the Far West, light causes dreams of fire, which instantly awakens them in fright, experience having taught them the need for haste. In others, the dreams may be of sunny climes or of historical conflagrations. Maury recounts that he caused a light surrounded by red paper to be passed before his eyes many times during sleep. He dreamed of a tempest with lightning, with all the remembrances of a violent storm.

Subjective (?) sensations may likewise initiate visual dreams. Dr Herbert Airy believed that the ocular spectra which prelude megrim may be mixed up with the dreams that precede the attack. It is well known that these ocular phenomena can be produced by pressure on the eyelids, and that they may arise from alteration of blood-pressure on the retinae. Goethe and Johannes Müller had the faculty of inducing them voluntarily.

It is superfluous to remark that light does not necessarily nor constantly cause dreaming. Some persons are unable to fall asleep in darkness. Many races are so terribly afraid of darkness that light is essential to obtain sleep. For example, the Japanese and Samoans dread it so much that they would rather forego or curtail their food than be without oil to keep a lamp burning all night. Other peoples sleep with light burning for divers reasons; amongst these may be mentioned warmth, purification of the air, defence from mosquitos, snakes, and wild beasts, etc. On the other hand, some races have a great prejudice against sleeping in the rays of the moon; for instance, the Chinese will not do so if they can avoid it, and in these cases it is believed that the dreams which occur in such conditions are of very ill omen.

(b.) Hearing.—Dr James Johnstone related that a person of his acquaintance, while asleep in bed, dreamed that a man was entering his room from the window, and had broken the water jug in animals sleep less soundly than civilized men. The senses are usually equal to what is required of them. It is not necessary for a man to be always on the qui vive when he knows that he is protected by bolts and bars inside his house, and by night policemen outside. Savages, on the contrary, require to be somewhat on the alert during sleep, and often their hearing is much more acute than that of their more favoured brethren. Wood states that the Hottentots (who are profound sleepers) will be aroused instantly by an almost inaudible sound presaging danger, such as the twang of a bow. In dogs the auditory centre is the most easily aroused during sleep. In deer it is the olfactory. The “winding” of a man readily awakens a sleeping deer. A most intelligent “stalker,” of life-long experience in several large forests, maintains that deer do not sleep so soundly as other animals. In fowls the centre of vision is the most sensitive. Advantage is taken of this in the preparation of pâté de fois gras. The Strasbourg geese are aroused by light from a lamp, every three or four hours, to be fed, and after their meal, and as the light is slowly extinguished, they return to roost. Hybernating animals can be roused into activity by various sensory stimuli.
attempting to step over it. The gentleman started up, and seizing a pistol which was under his pillow, was about to shoot at the intruder, when, most fortunately awakening, he discovered that the supposed thief was his own servant, who, having come to call him in the morning, had accidentally broken his jug. Macnish says that the sound of a flute may invoke a thousand delightful and beautiful associations—"The air is perhaps filled with the tones of harps and all other varieties of music." A nurse, who frequently dreams of the braying of a donkey, states that this is due to the snoring of a child who has enlarged tonsils. A noise occurring in the course of a dream may change or modify the subject or current of a dream, just as a sudden or loud noise may, in waking moments, distract the thoughts of a man from the subject occupying his mind. Sometimes a sleeper is awakened by the sound of his own laughter excited by an amusing dream, for dreams may excite pleasure and amusement as well as terror. Noises caused from storms, etc., often provoke dreams.

Subjective (?) sensations, such as those designated *tinnitus aurium*, and which usually depend upon well-marked objective causes, have caused dreams of music of surpassing grandeur. In one instance this was construed into a foretaste of eternal glory. Such sensations are a frequent source of dreams in chlorotics. There are few doctors, probably, who have not dreamed that their night-bell had rung. One retired physician was so persistently tormented with such a dream that he declared that the only miserable time he had was when he was asleep in bed.

Here, again, it must be noted that sounds do not necessarily cause dreams, neither do they disturb sleep. Areteus long ago wrote:—"Whatever is familiar to anyone is provocative of sleep." The Æolian harp and other monotonous sounds have been employed as aids to sleep. The truckle-bed or trundle-bed, which is still known in some parts of Scotland, was introduced by the rich for the purpose of wooing sleep. Occasionally a minstrel occupied it, and played soft and pleasing strains. Sir John Sinclair records—"It was formerly a custom, in the more remote parts of Scotland, to employ bards to rehearse to great men the verses of distinguished poets, and by these means, in some measure, the poems of the celebrated Ossian were so long preserved by oral tradition." In Greece, Russia, and other countries, this bed was similarly used. It must be observed that sleep is disturbed by some noises and not by others. Some persons hear "low" better than "high" sounds when awake, and they are most easily disturbed by such sounds during sleep. The Hottentots, who are most readily aroused by

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1 Wendell Holmes concludes his poem "The Old Man Dreams" thus:

"And so I laugh'd—my laughter woke
The household with its noise—
And wrote my dream, when morning broke,
To please the gray-hair'd boys."
faint sounds which forebode danger (see footnote, page 714), will
sleep deeply even if a gun be discharged close to their ear.

(c) Smell.—For the keen perception of odours it is necessary
that the fragrant particles should be sniffed into the nostrils, that
they may infringe upon, and be dissolved in the secretion of the
Schneiderian membrane. As mucus is not secreted in any quantity
during sleep, the stimulation sufficient to cause dreams must be a
powerful one. Odours frequently prevent the onset of sleep, but
they do not often disturb or terminate it. Three patients, residing
in Kensington, assure me that they have recently been awakened
by smells prevalent in that quarter during the night, but I have
met with no patient who appeared to have had dreams excited by
these odours. Maury writes,—“I am caused to smell a burning
match, I dream that I am at sea (remark that the wind was blow-
ing through the window), and that Saint-Barke blew up.” This is
an instance of a dream produced by complex impressions acting
through the olfactory and peripheral nerves, and giving rise to
associated ideas. In such instances the strongest impression
usually determines the dream. Of another dream Maury says,—
“I was caused to inhale Cologne water. I dream that I am in a
perfumer’s shop, and the idea of perfumes doubtless awakens the
idea of the East. I am in Cairo, in the shop of Jean Marie
Farina.” This again is an example of an olfactory dream being
converted into a visual dream, an occurrence so common that
dreams are often called visions. In the Bible the terms are used
indiscriminately.

(d) Taste.—Hammond states that a woman who was accustomed
to suck her thumb had some aloes applied to it in the hope of
breaking the habit: she dreamed she was in a ship of wormwood.
Lyman also relates that a few drops of vinegar placed upon the
tongue caused dreams of eating oranges. Stimulations acting
through this sense are often modified into olfactory dreams. A
parched condition of the tongue, from sleeping with the mouth
open, may cause dreaming. A lady so troubled, dreams of swallow-
ing large substances, as false teeth or fruit stones, and she fre-
quently finds herself, as she awakes in fright, sitting up in bed
trying to withdraw them from her mouth, and not feeling them,
looks to see if she has placed them on the table at her bedside.
Curiously enough, her sister, who did not suffer from dryness of
tongue, was accustomed to dream of swallowing peach stones, and
to awake believing that she was choking.

(e) Touch.—This centre, being deeply situate in the brain, prob-
ably slumbers least soundly, and so is capable of giving rise to
dreams more frequently than the other senses. Tactile and ther-
mometric impressions are transmitted by different afferent nerves.
Dreams caused by stimulations acting through this sense are
biassed by the nature of the stimulus and its intensity. Alison
pointed out that cold is sufficient to initiate dreams. In whoop-
ing—cough the slightest current of cold air passing over a child is provocative of a severe paroxysm of the cough; it is sufficient to cause dreaming. Dr Abercrombie mentioned that Dr Gregory (who, according to Laycock, had a lymphatic temperament and a rheumatic diathesis) dreamt of spending a winter at Hudson's Bay, and of suffering much distress from intense frost. He found that he had thrown off the bed-clothes in his sleep; and, a few days before, he had been reading a very particular account of the Colonies in that country during winter. Dr Abercrombie further records that Dr Gregory having gone to bed with a vessel of hot water at his feet, dreamt of walking up the crater of Mount Etna, and of feeling the ground warm beneath his feet. Maury states that,—"A drop of water is allowed to fall on my forehead, I dream of drinking the wine of Orviette." MacNish says that a friend who slept in damp sheets dreamt that he was dragged through a stream. Hobbes, however, thought that such conditions gave rise to dreams of fear.

Such impressions do not uniformly cause dreaming. Kerr has recorded that the people of Mashona sleep with the body so close to the fire that it is literally baked. It is said that the Jacuta men sleep opposite the fire, in a temperature 50° below zero, with their backs exposed. The Laplanders protect the back well during sleep, but they are not particular about covering the chest. Hartwig has, however, pointed out that the Bushmen are insensible to changes of temperature, and do not feel pain; inured to every hardship, they sleep, like a wild animal, in their lair or under the shelter of a bush.

Dr Reid related, "that the dressing applied after a blister on his head having become ruffled so as to cause considerable uneasiness, he dreamt of falling into the hands of savages and being scalped by them." Tactile impressions invariably cause restlessness (sensori-motor dreaming) first, and subsequently dreaming. Mosquitos (the females) in certain climates cause much dreaming, and it has been pointed out that this is not an unmixed evil, as they render sleep light, and so assist in keeping the sleeper on the qui vive for enemies. Slight pain may cause dreams of agony, and that when it is so trivial as to be imperceptible by day. Dreaming of pain in a localized region has been followed in some days by a carbuncle, boil, or other lesion. Neuralgic pains, insufficient to awaken the sleeper, may cause like dreams. Pain, arising from deep suppurations and other grave lesions, may, when sleep ensues, cause frightful dreams. Dr John Brown in Rab and his Friends describes most touchingly Ailie, who was drawing near her end after excision of the breast, dreaming that the pain in her breast was due to its being uneasy with milk, and sitting up to suckle her only child, dead 40 years before.

Tactile excitations do not always cause dreaming; on the contrary, they have been used as aids to sleep. Amongst the Hindus
and the Chinese, it was a sign of prosperity to keep attendants to tickle or rub the soles of the feet until sleep ensued; and the monotonous stroking of the skin has been much practised in this country to woo sleep.

Subjective sensations in the skin frequently cause dreaming. Hebra and Kaposi, in discussing pruritus universalis, write:— "It influences their dreams in the most varied and extraordinary shapes. Sometimes the poor fellow believes he is stroking his favourite dog, and as this pleases the dog, he goes on stroking till he uses his nails freely. He gets quite out of breath with scratching, and cannot by any means abstain; then he wakes up suddenly and finds that his favourite hound is his own skin, and proof that he has really only been scratching this in his dreams is afforded by the number of smarting and burning excoriations. Another time he dreams that he has to rub or polish the floor or to scrape the walls. The visions are always analogous, and concern his own diseased skin."

Disturbing impressions may arise in innumerable ways. Disorders of the uterus and ovaries may initiate excitations, which, projected during sleep, may cause dreaming. The victims of uterine and ovarian affections, and floating kidney, are often depressed, hypochondriacal, and neuralgic during waking; they are likewise afflicted with dreaming.

Any interference with the respiratory movements normal to sleep is productive of dreaming, particularly when they are quickened and their freedom embarrassed. Nightmare has been caused by a cat lying upon a sleeper's chest; it has likewise resulted from sleeping with an arm lying awkwardly across the chest. It, as well as dreaming, is often met with in hysteria, gout, etc., that have flatulent distension of the stomach and intestines (which impedes respiratory movements) as a symptom. Greisen-ger thought that accelerated respiratory movements accounted for dreams of flying, and slower respiration for dreams in which the sensation occurred of being drawn down from a height. Acute diseases of the thoracic organs may be preluded by dreams, and in pneumonia these may presage delirium. In emphysema and pleuritic effusion dreams are frequent; they are usually accompanied by sensations of oppression, suffocation, or nightmare. Dreams so frequently precede a paroxysm of asthma, that it is

1 Captain Cook, in his Travels, described a custom of inducing sleep that he met with in his last voyage, when staying at Tongataboo as the guest of Futafaike. "When supper was over, abundance of cloth was brought for us to sleep in, but we were a good deal disturbed by a singular instance of luxury, in which their principal men indulge themselves. Two fat women performed the operation, which is called 'tooge tooge,' by beating briskly on his body with both fists, as on a drum, till he fell asleep, and continuing it all night, with some short intervals. When once the person is asleep, they abate a little in the strength and quickness of beating; but resume it if they observe any appearance of awakening." The women relieved each other by turns.
No. 1: Edw. Wirth, Age 36 - Tuberculosis.

No. 2: John Ferris, Age 14 - Suspected Incipient Phthisis.

No. 3: Vincent Politz, Age 34 - Incipient Phthisis.

No. 4: Joseph Politz, Age 5 - White Swelling of Knee.

No. 5: Sam. Dixon, Age 17 - Lupus Vulgaris Faciei.
often possible to predict the occurrence. In phthisis pulmonalis dreams of a terrifying nature precede all other symptoms; they correspond in the course of the disease to the diurnal euphoria known as the spes phthisica. They are most troublesome in those patients who have a tendency to become bronzed. Night-screaming occasionally occurs. In advanced cases of consumption the respirations may be quickened when sleep is deepest. Dreams, like cough and other disturbers, have a tendency to slow them. The dreams are usually vivid and rapid; at times they are so distressing as to make the patient try to keep awake, rather than run the risk of dreaming again during sleep. Laryngismus stridulus would appear in some instances to be provoked by dreaming. Turbulent emotions suffice during the day to excite it.

(To be continued.)

IV.—CONTRIBUTION TO VENESECTION AS A REMEDY.

By John Shand, M.D., F.R.C.P. Ed.

(Read before the Medico-Chirurgical Society of Edinburgh, 17th December 1890.)

Mr President and Gentlemen,—In response to the request of some of our ex-Presidents, I have selected the subject of Venesection. Though regarded as a bête noire or almost forbidden subject—indeed, a questio vexata—at various periods during the last three centuries, yet as a wave in its favour seems now impending, I feel it my duty to contribute a few cases from past practice in illustration of its utility.

I am the more encouraged to do this, as the example has been already set by professional men of such distinction as Dr Broadbent of St Mary's Hospital, London, the President of the last meeting of the British Medical Association in the capital of the United Kingdom; as also by His Excellency the philanthropic Dr Gunning of Brazil, otherwise so well known in this city for his munificent contributions to our various schools of learning. Indeed, my cases which I propose bringing before you are to my mind much in the way of a complement to his own paper on this subject,—which paper, on account of his impending blindness, I read for him, at his request, to this Society some six sessions ago. To my disappointment no discussion followed the reading of the paper—a striking proof how little palatable the subject is even yet, else what I have to say now would have been said then.

I may here be allowed to remark how much admiration I felt

1 A title conferred on Dr Gunning by the late Emperor of Brazil for his benevolence and generosity to its inhabitants, on whose behalf he is even now en route to Brazil to institute an orphanage at his sole expense.