

therefore only show specimens of the leaves. The plant has been, I may say, identified by an eminent botanist as *Scopolia lurida*. A short description of the plant is as follows: A herb growing very locally at an elevation of 7,000 to 8,000 feet, with a tap-root 1 to 3 feet long furnished with small rootlets; the stalks, several of which spring from the same root, are green in colour, solid, succulent, with an acrid juice. The leaves are alternate, petiolate, estipulate, differing in size according to their position in the stalk, the lower and older being more or less obovate with faintly acuminate apices, the higher and younger are oval and taper to a point; their margins are very faintly crenated, almost entire. The plant for which it was mistaken is, the men say, very similar in appearance, and is known by them in Nepal as *Laringa* or *Tambáku ság*; even here in the Galis it is known as *Tambákú ság*, but its poisonous properties are recognized. There is said to be this important difference between the poisonous *Scopolia lurida* and the harmless *Laringa* of Nepal, viz., that in the former the stalk is as has been described solid and succulent, in the latter hollow. There are doubtless many other more technical distinctions not to be easily noticed by the uneducated.

A GENERALLY UNKNOWN SOURCE OF ENTERIC FEVER.

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How frequently do we hear of the "Enteric Season," and how seldom can any one give a satisfactory explanation of the idiom. Upon one point, however, all seem to agree, viz., that its epoch is coincident with the rainy season. Few people seem to recognise a subtle enemy existing within their houses, I refer to the bath. Let me first remind the inhabitants of this country that the water in which they enjoy so frequently the refreshing effects of a "plunge wash" is drawn from polluted sources; stores of water collected from surface drainage—water that has passed over soil laden with dead animal and vegetable products, and hence loaded with millions of enemies to human life. It is palpably more poisonous during, and after, the rainy season; further, any collection of impure water is rendered more potent by the advent of a break in the rains; for then, a hot sun throws its genial influence upon the colonies of bacteria collected together in tanks, lakes, wells, etc. Thus they increase and multiply to their heart's content, and their aqueous habitation becomes a seething mass of iniquity. Into this we plunge with a vigour, begotten of

its refreshing effects, and our natural repulsion to collected perspiration. As the head is ducked beneath the surface, or a sponge passes over the mouth and nose, the lips are separated, the nostrils dilated—what results? Some of the "seething mass of iniquity" passes into the cavities of both mouth and nose; at times, is even swallowed direct. Reflect now, what may have happened? The interstices of your teeth, tongue, throat, and the complicated mechanism of your nasal mucous membrane, all constitute places where bacteria are caught and lodged; unless these areas are well washed out immediately, you are apt to swallow their arrested bacteria in saliva, nasal mucus, or food, precisely as if you had taken a drink from your bath. A worse condition pertains if a person has caught cold, or the lining membranes are inflamed, and their vitality lowered from any cause; for then the surface constitutes a suitable breeding ground for bacteria; finding this congenial habitat, they rapidly multiply, and may be carried into the digestive tract in many ways.

I trust then it is clear to all that they can imbibe poison from water, without actually drinking it, and I maintain that the bath water of this country is frequently a supply depôt. Even the water employed for washing teeth is frequently contaminated, especially in railway carriages, hotels, etc., and becomes an obvious source of infection.

Having drawn attention to this subtle enemy in our midst, I beg to offer advice upon some methods of avoiding his ill-effects. The best is to have all bath water boiled for at least five minutes: but this is obviously impossible in a great many conditions of life. Nature, however, has supplied us with safety valves, the use of which is little known. The lips, when ducking the head below water-level, or sponging the face, should be firmly compressed together. If any water inadvertently enters the mouth, splutter it out. It is surprising how easily water runs into the nostrils; and a good plan is to inhale all the air possible, "take a good long breath," before the face is immersed or sponged; blowing this air through lips and nostrils, so long as they are in contact with the water. Should you feel the peculiar "sting" of water when touching the lining membrane of the nose, blow down the nostrils violently, at least three times: thus ejecting what may seem a ridiculously small amount to fuss about, but which may contain many thousands of poisonous bacteria. If our enemy has entered the mouth, spit him out without hesitation—"how nasty"! doubtless many will say,—true,—but the less nasty of two evils. Your saliva is cleaner than your bath water, and should they become inadvertently mixed, surely 'tis preferable the mixture should be relegated to the bath rather than to your body.

Further, always wash the teeth, and gargle the throat immediately after a bath; use a strong antiseptic tooth powder—and plenty of it, most people do not apply half enough of the antiseptic to their teeth and mouth. Three fresh supplies should be employed at each washing: one for the centre, and one for each side of the mouth. All these theories and precautions apply equally to those who bathe in rivers or streams. It has been proved beyond doubt that many of our cases of enteric fever in armies, especially on active service, have originated by the imbibition of contaminated water whilst bathing.

ADRENALIN AND ITS USES IN GENERAL SURGERY, ESPECIALLY APPLIED TO OPHTHALMOLOGY.

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I HAVE now used Adrenalin in my surgical work for over two years, and have been so struck with the many advantages that it possesses as a most powerful and rapid styptic, hæmostatic and astringent that I have ventured to place before the profession this small article, giving a short account of the history of the drug, its various forms in use, methods of administration, action, and a few selected cases in which I have used this drug illustrative of its action.

Adrenalin (synonyms "*suprarenal liquid*," "*renoglandin*").—It is the active principle obtained from the supra-renal glands, and was first discovered by Professor Jokichi Takamine, of New York, some few years ago. It is said to be many times more powerful than the ordinary extract obtained from the supra-renal glands. Hitherto when a solution of the supra-renal gland was required for immediate use it was customary to prepare it from the desiccated gland, but this was found not to be practicable in cases of emergency. The difficulty at first was how to obtain a stable solution of this drug, *i.e.*, a solution that would not only retain all its full powers of action, but also remain stable, and consequently a solution of this adrenalin was made, but this did not seem to answer very well, for it was found to soon decompose and deteriorate in quality. To overcome this difficulty a solution of adrenalin chloride was made, to which was added a certain known quantity of a solution of "*Chloretone*." This chloretone is a drug which is said to possess slight antiseptic and marked anæsthetic properties. A watery solution of chloretone is obtained by adding the crystals of the salt to some warm water and allowing it to cool; the undissolved chloretone will separate from the liquid and the resultant solution will contain about 1% of chloretone. This combination of adrenalin and chloretone

has apparently solved all previous difficulties, for in this we have a superior drug, one with not only valuable styptic properties, but also anæsthetic and antiseptic qualities. Adrenalin chloride solution contains as a rule about 0.8 to 0.5 % of chloretone added to it, and this preparation is said to be roughly equivalent in its anæsthetic action to a 2 % solution of cocaine. One part of the preparation now made is said to represent one part of the fresh gland, or, in other words, roughly about four-fifths of one part of the desiccated gland. There are various forms of adrenalin now in the market for use, *viz.*

(1) *Pulvis adrenalin (Takamine)*.—This consists of a whitish crystalline powder, being the active principle obtained from the gland. It is insoluble in cold water, though somewhat soluble in alcohol and hot water. It is very difficult of manipulation and is seldom, if ever, administered in this form, being merely of scientific interest.

(2) *Solution of adrenalin chloride (strength 1 in 1000)*.—This may be diluted to any strength required either with previously boiled water or normal salt solution, the latter preferably. This form may be used as a local application in cases of hæmorrhage. It is not a very stable compound and should be used fresh, for it often very soon turns dark brown in colour and should then be discarded as useless. It is not safe to use this either hypodermically or intravenously unless when the solution is quite clear and fresh. It may also with advantage be used in the form of a spray. Dose internally, 5 to 30 minims.

(3) *Solution of adrenalin chloride cum chloretone*.—This is physiologically standardised by the manufacturers, and is the safest and most stable form of the drug in use. It consists of the following:—

Adrenalin chloride (Takamine)	... one part.
Normal sodium chloride solution (with 0.5% of chloretone)	... 1,000 parts.

This solution can either be used locally, or when freely diluted in the form of a spray, (dilution for spraying from 1 in 10,000 to 1 in 20,000); it may be safely injected subcutaneously in doses of from 3 to 5 minims, or administered internally in doses of from 5 to 30 minims. This is the form of the drug I always use in my surgical work.

(4) *Supra-renal gland desiccated*.—This is also physiologically standardised, and is the most convenient and best form for internal administration when a prolonged and general systemic effect of the drug is required. It may be taken in the form of a powder, tabloid or capsule, each containing two grains of the desiccated powdered gland. It is well adapted for the preparation of extemporaneous solutions.

When the liquid adrenalin chloride with, or without, chloretone is used in the form of a spray, it should be diluted either with previously boiled water or normal salt solution, strength as