

Kelly (H.A.)

The Hand Basins in Use in
Surgical Operating Rooms

BY

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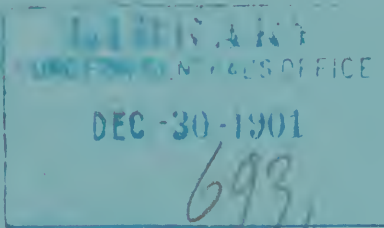
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THE HAND BASINS IN USE IN SURGICAL OPERATING ROOMS.¹

THE effective washing of the hands is perhaps the most important single step in the entire series of the active antiseptic preparations for a surgical operation. In order that the hands may be properly washed a number of conditions are essential.

In the first place, a good brush is needed, of vegetable fibre, which will stand repeated sterilizations, and is large enough to afford a grasp for the entire hand (13 by 5 centimetres), and stiff enough when wet to penetrate easily the subungual spaces, yet not so stiff as to tear the skin.

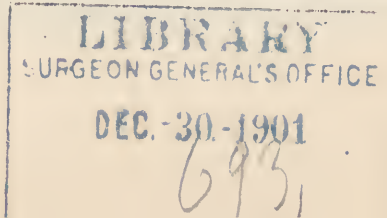
In the second place, only a daily practice continued for some weeks teaches a man how to use his brush most effectively, in combination with soap and water, in removing all the detachable débris from the hands, fingers, and nail spaces. And yet, strange to say, most men think they know how to wash their hands skilfully at the very outset without this practice.

It is important, for this reason, that all young assistants who are not thus trained should wear rubber gloves during their early apprenticeship, or the cotton-thread gloves which I have used in my clinic for the past three years.

In the third place, as shown by Zweifel and abundantly demonstrated by my own personal experience, hands which have been but recently contaminated by contact with any acute septic process cannot be sterilized by any known procedure whatever and can only be made clean by repeated washings and the lapse of time.

A surgeon who is actively prosecuting his work should never examine a puerperal septic patient unless he puts on a rubber glove to do it; if he does make such an examination without a glove it must be after his work hours are over, and he should then drop all surgical work for a period of not less than three days.

¹ An address delivered before the Baltimore Gynecological and Obstetrical Society, January 11, 1898.



After unexpectedly encountering a septic case or opening a pelvic abscess in the course of a series of operations, the hands must be regarded as septic and all further work for that day must be postponed. I would not allow a surgeon to operate upon one of my near relatives under such circumstances, and I cannot make any different rule for my patients, whoever they are.

Fourthly, the water in which the hands are washed must be free from pyogenic organisms. Fortunately the ordinary tap, well, and spring water generally answers this requirement. In

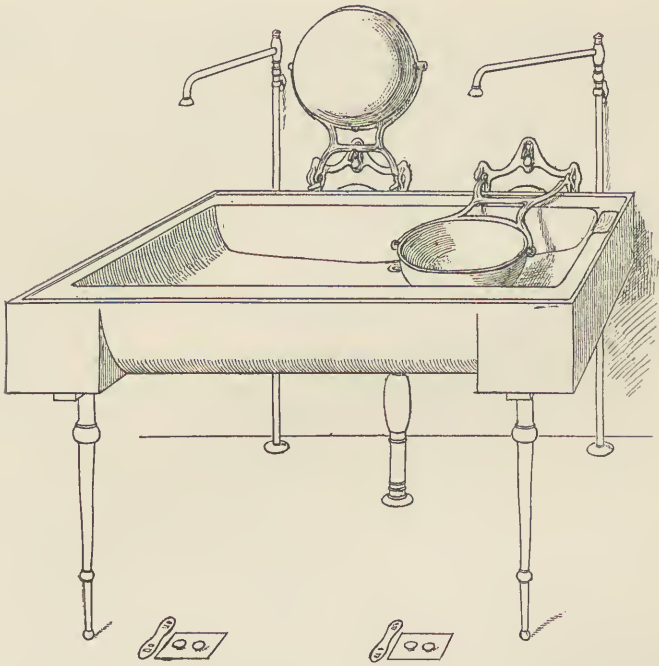


FIG. 1.—Arrangement for wash basins in private hospitals. The basins are placed over a large porcelain sink and filled with water by means of Robb's pedals. Each basin swings in its frame, and is emptied into the sink by a light touch on the rim. When out of use the basin and frame are hooked up against the marble slab on the wall, as shown on the left.

every clinic, however, bacteriological examinations of the tap water should be made at various times of the year to test its quality.

The water from the hot faucet is, as a rule, notably freer than the cold, and in some cases, if the temperature is high, it is even sterile.

Fifthly, I wish to dwell especially upon several important

points relating to the manner of washing the hands, and the hand basins.

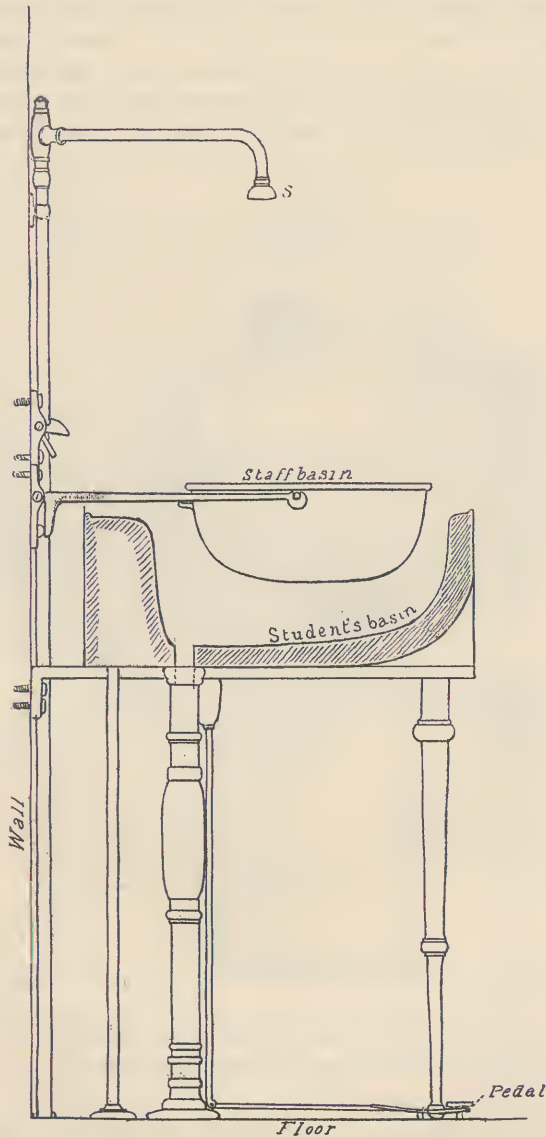


FIG. 2.—The arrangement of the hand basins at the Johns Hopkins Hospital. The metal basin used by the operator and house staff is set in a frame which can be elevated as in Fig. 1. The basin is pivoted and easily lifted off from the frame and put in the steam sterilizer before using. Beneath this is a second basin, a porcelain fixture, which is used exclusively by the students before making vaginal examinations, etc. The spray (s) is adopted from the Royal Victoria Hospital operating room. |

To wash the hands well one must give the act of washing an undivided attention; if the operator is distracted either by those about him or by any personal discomforts, he will not do the washing as well as if his thoughts were concentrated on the act. For this reason conversation, except of the briefest sort, should be omitted, and the operator or assistants should sit on a stool in a comfortable position, gently inclined toward the basin. By doing this he will avoid the wearisome stooping

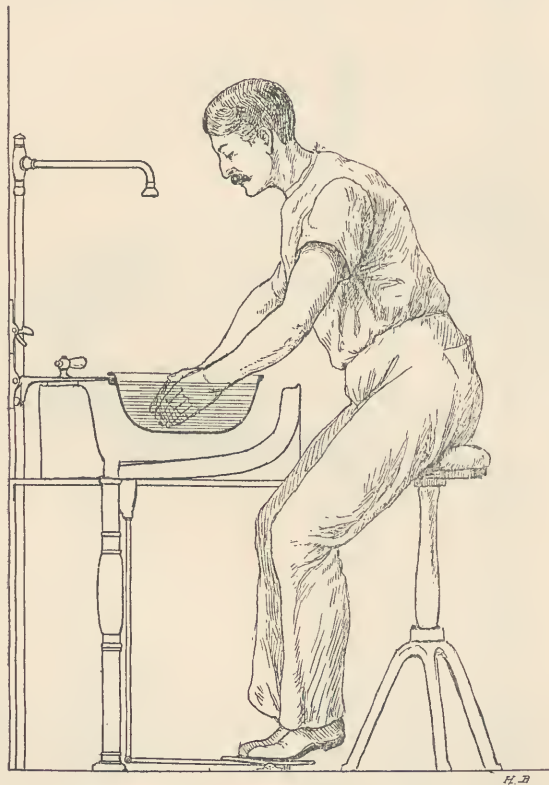


FIG. 3.—The surgeon sitting with the body inclined in an easy posture while washing the hands, instead of standing bent over and tiring the back and exhausting nerve force, and so both tending to shorten the work and render it less perfect.

posture, often painful to the back and uselessly exhausting nerve force. Sit down and wash in comfort for five or for ten minutes, according to the condition of the hands and according to the experience of the man (see Fig. 3).

It needs no demonstration to show that the hands are more

thoroughly and quickly cleansed in a strong alkaline soapy solution changed from time to time, than under running water which immediately removes all the soap and calls for its incessant reapplication.

To this end basins are necessary; but the fixtures in ordinary use are utterly unfit for the service and ought to be discarded, for they lodge the filth and grease of vaseline contaminated by

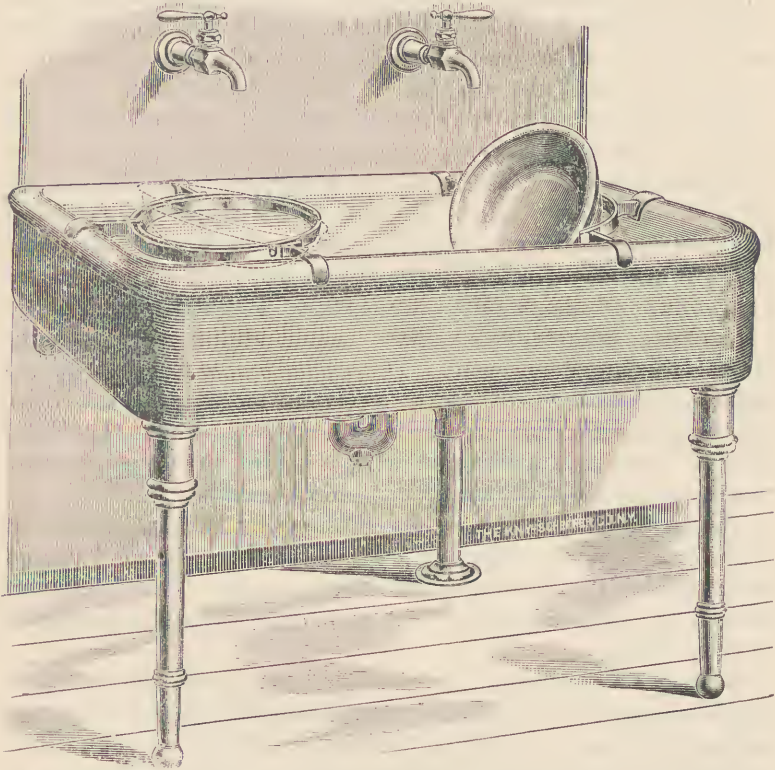


FIG. 4.—Frame carrying detachable metal basins adapted to the porcelain sinks in common use in operating rooms. After the operation the frame may be lifted off and set aside.

various examinations, and cannot be sterilized by any known method. Not infrequently they are cracked, and then the condition becomes worse than ever. The portable basins, taken from house to house, are far safer than the fixtures of most operating rooms.

To obviate these difficulties I have devised several forms of detachable basins, of pure nickel, German silver, or copper nickel-plated, hung under the water tap on a frame from which

they can be easily lifted and put in the steam sterilizer together with the dressings, or boiled in water, and so effectively sterilized (see Figs. 1 and 2).

In my private hospital these basins stand under mixing spigots supplying hot and cold water, and when in use they are easily filled by means of the foot taps invented by Dr. H. Robb and first used in my private hospital and now in use the world over.

After the preliminary scrubbing a little touch tilts the basin, which is pivoted beyond its centre, and spills out the water into the large porcelain sink beneath it. When out of use it is swung up against the wall and held there by a catch.

After and before each operation the basin is sterilized in the steam sterilizer, so that it is impossible for any lingering contamination to infect the hands in a manner perfectly possible with the ordinary basins. At the Johns Hopkins Hospital I have a different device, adapted to the two classes of individuals liable to use the basins—the resident staff and myself on the one hand, and the medical students on the other (see Fig. 2).

Here each removable sterilized basin overhangs an ordinary large oval porcelain basin. The upper basins are used by the house staff and when out of use stand up against the wall. The students use the lower basins exclusively, and so the added risk of washing in common with a set of men whose movements we do not at all times control is avoided.

The basin should be not less than 30 by 30 centimetres in diameter. The advantage of solid metal over plated or coated basins is that the former do not chip or scale off from the difference in the expansion of the two materials when heated in the sterilization.

Messrs. Kny, Scheerer & Co. have constructed, according to plans furnished, a very satisfactory frame carrying pure nickel basins, tilting and removable, which fits over the porcelain sinks commonly found in all operating rooms. When the sink is in use the frame, together with the basins, is lifted off and set aside.

I have just received from Dr. F. F. Simpson, of Pittsburg, the photographs of a simple but beautiful apparatus, consisting of a ring carrying a basin, connected by means of a metal rod with a pedal, by means of which the basin is emptied without touching it with the hands.

I sincerely trust it will not be long before every surgical clinic in our land will discard fixed glass and porcelain basins and substitute in their place metal basins which can be removed and sterilized.

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