

"2. Did the physician violate the code, especially Article IV, Section 1?

PHYSICIAN."

July 10, 1886.

Answer.—Regarding the hypothetical statement above as strictly correct, we answer both questions in the negative. To visit a patient represented to be in great distress or critically sick, examine the patient and get whatever information can be obtained from those present, even if one of them happens to be a physician, either regular or irregular, and then proceed to administer whatever relief can be afforded, whether it be to introduce a catheter, apply the obstetric forceps, or write a prescription and give the necessary directions for its use to the patient or those nursing him or her, constitutes no more a *consultation* with the physician present in the room than with the nurse or any other party present.

If, however, the physician thus called in a presumed emergency, not only examines the patient and gets all the needed information he can, but also then turns to the doctor present and enters into discussion with him concerning the nature of the case, and its proper treatment, it constitutes an actual consultation with him. See JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, Vol. IV, page 537.

THE NEW WORK ON RENAL DISEASES, by Dr. Purdy, mentioned in a recent editorial in THE JOURNAL, is published by Lea Brothers & Co., Philadelphia, and can probably be found in the medical book-stores generally.

EPIDEMIC CHOLERA continues to prevail in some parts of Italy, and is extending moderately to the north. But the summer is already so far advanced that there is very little danger of it invading Germany, France or the British Isles, and still less of its reaching this country the present year.

SOCIETY PROCEEDINGS.

PATHOLOGICAL SOCIETY OF PHILADELPHIA.

Semi-Annual Conversational Meeting, April 22, 1886.

THE VICE-PRESIDENT, JAMES TYSON, M.D., IN THE CHAIR.

W. E. HUGHES, M.D., RECORDER.

DR. GEORGE A. PIERSOL read by request a paper on

MEDICAL PHOTOGRAPHY.

The character of photographic work which the medical man may probably desire to undertake may be divided into three groups: 1, photographing

specimens; 2, photographing patients; 3, photographing microscopical specimens; to which, possibly, a fourth should be added—making lantern slides or enlargements for the purpose of illustrating lectures. As to outfit, all of these requirements must be borne in mind. At the present time, possibly the best equipment for medical work would be one of Walmsley's modified copying cameras, as manufactured by the American Optical Company, taking a $4\frac{1}{4} \times 5\frac{1}{2}$ plate fitted with a first-class lens. Regarding the latter, those desiring the best might limit their choice with advantage to the lenses made by Ross, Dallmeyer or Beck. Personal experience with the Beck lens warrants a most favorable recommendation, as its superior qualities adapt it admirably for work requiring fine definition with great focal depth. As a matter of economy the excellent lenses of Daclot might be substituted for the higher priced English glasses. As much less expensive the "Waterbury" outfit (camera, lens and tripod costing but \$14) is worthy to be considered. The addition, however, of a light wooden extension is imperative to obtain sufficient length of bellows to reproduce specimens of a normal size—a matter often desirable. A lens adapted for medical work would be a rapid rectilinear combination of about $8\frac{1}{2}$ or 9-inch equivalent focus—a shorter focus lens possessing insufficient focal depth. In addition to the camera and lens, a simple dark room outfit, embracing non-actinic lantern, three trays, graduate, dust brush, light-proof box for opened packages of plates, and a few tubes, is necessary. Proper illumination is essential for satisfactory results. An evenly distributed top light is most desirable. This can be obtained readily from a skylight; such a convenience, however, is frequently wanting. An excellent substitute may be readily had by running the apparatus to the open air and stretching over all a piece of muslin, thus providing a mellow, evenly distributed top-light admirably adapted for photographing specimens. In focussing the use of a focussing glass is advantageous. Focus without the diaphragm on a point lying midway between the extremes of the planes of the specimen; afterwards put in the smallest stop (say No. 128 F., = 45.2 English scale). The small stop necessitates a rapid plate unless the exposure is unduly prolonged. A fast plate and small stop, when properly employed, yield pictures with the best possible definition and great focal depth, qualities very essential to satisfactory representations of specimens.

In order to insure acceptable results a correct exposure should always be attempted. The length of exposure depends upon many conditions—among others, actinic power of the light, this being modified by sunshine or clouds, by time of day, by season of the year; color of the specimen—a tissue deeply dyed with blood requiring much greater exposure than the alcohol bleached organ; character of the sun; size of diaphragm; sensitiveness of the plate; strength of the developer. Since these all modify the duration of any individual exposure, the oft heard comparison as to the bare numbers of seconds given upon various negatives are of very little importance. Each worker must determine for his own conditions

the exact number of seconds required on the ordinary specimens, and with this as a basis meet changing conditions as the occasion demands. While there are many excellent formulæ, the following developer has always answered admirably, and with it, by slight modifications, all kinds of work may be satisfactorily performed:

No. 1.

R.	Pyrogallic acid (Schering's).....	1 oz.
	Sodium sulphite.....	6 oz.
	Water.....	48 f3.

No. 2.

R.	Sodium carbonate.....	4 oz.
	Water.....	48 f3.

No. 3.

R.	Sodium bromide.....	1 3/4.
	Water.....	1 3.

Use equal parts of No. 1 and No. 2 with 3 to 5 drops of No. 3 as a normal developer, the entire bulk of the developer being say 3 f3. Remember No. 2 accelerates, while No. 3 retards development; No. 1 giving density. A plate is fully developed when the deep shadows show some detail and when the cardinal outlines of the picture show on the back of the plate with reflected light. The most usual failures result from over-exposure and under-development. When a plate blackens rapidly, without the requisite amount of contrast between the high lights and deep shadows being at first present, we may strongly suspect over-exposure. Pour off the developer, flood with water, and then proceed once more with a developer to which say 20 or 30 drops of No. 3 have been added.

The remedy for under-development is evident. Strongly to be emphasized—select a good brand of plate, choose a reliable developer, and only change when there exists a strong reason for so doing; by this plan alone can the peculiarities and valuable qualities of any plate be learned. In addition to these fixed conditions, by at first employing but one lens and a single diaphragm, the path of the tyro is greatly smoothed. In photographing a patient, if possible a skylight should be used; when, however, none exists we can succeed fairly in any well lighted room, preferably one having two side windows. Opposite to window No. 1, and about four feet removed, we place our subject almost parallel, facing the second window. The lower half of window No. 1 is covered with muslin, while over the upper half is partly drawn the shade. Window No. 2 (further removed from the patient, but toward which he looks) is unobstructed. The camera is placed somewhere near the second window. Some simple background should be improvised and the darker side of the subject should be lighted up by a reflector of white muslin. Since the actinic power of light is immensely reduced within doors, our exposure would be unduly prolonged if we used the smaller diaphragms; we are therefore usually compelled to use the larger ones—Nos. 8 or 16. Photographing microscopical specimens requires a camera with a long bellows, 24 to 26 inches. This may be had by adapting to the front of an ordinary camera an extension, which may be readily constructed of wood, cardboard or tin. The

inner surface of the entire track of the light from the objective should be lined with black paper with matt surface. Any microscope admitting of a horizontally placed tube, with a good stage and centering substage, may be employed. Likewise any objective possessing good definition and flat field may be used. The eye piece is best removed, the camera and microscope being united by simply inserting the draw tube into the extension of the camera and wrapping the joint with a few pieces of some black fabric.

Illumination is very important. Four sources may be considered—lamp, calcium, electric and sunlight. Calcium and the electric lights, while quite satisfactory by way of experiment, are practically debarred by the expense and inconvenience attending their use. The incandescent electric light, at the present time, offers little advantage over good lamplight, and is far inferior to sunlight. It may be stated once for all, that sunlight properly employed is the best possible illuminator for photomicrography. As it requires some care in its employment, and, above all, the devotion of the busiest hours of the day, we may inquire what can really be accomplished by lamplight. Mature consideration and considerable experience justify us in saying that with care and proper manipulation really good photographs may be made with powers up to the $\frac{1}{6}$; of course very much higher lenses may be employed—even the $\frac{1}{5}$ and $\frac{1}{4}$ —but thoroughly satisfactory lamplight work with lenses approximating 1,000 diam. is seldom if ever seen. One thing seems demonstrated beyond question: that with any power it is almost impossible to obtain the soft but brilliant micronegative, full of detail and vigor, that sunlight is capable of yielding. For lamp light a lamp with a single moderately broad wick should be employed, the edge of the flame being turned toward the object. For very low powers, 3—1 $\frac{1}{2}$ inch, no condensing lens is necessary. With higher powers, the interposition of a 4-inch focus plano-convex lens is advantageous, and with still higher lenses (say from the $\frac{2}{3}$ up) some form of substage condenser in addition is almost imperative. After many experiments with various forms, a "B" eye-piece as a condenser seems to yield the best results, giving a powerful and evenly distributed illumination. Accurate centering and even distribution are of the utmost importance. First centre the substage condenser. Avoid "pushing" the illumination, as when the condenser is racked too high the margin of the field is destroyed. Experience teaches the advisability of using a slow "clean working" plate (say Carbutt's "B") in preference to the very rapid brands. A mirror placed at the end of the work table opposite the ground glass of the camera, is of great assistance in adjusting illumination; a small hand glass is also convenient to reflect the picture when hunting fields. The most important, as well as difficult, manipulation is focussing. With a short "pull" there are no special requirements, but when a long camera is extended, removing ground glass to three or four feet, some arrangement of moving adjustment is necessary. The simple arrangement with cord and weights, which we devised eight years ago, and which has of late become extensively used, we still

recommend as meeting all possible requirements. It has been put to the severest tests with powers of over 3,000 diam., and never has been found wanting either in delicacy or accuracy. A modification may be applied to the coarse adjustment.

A focussing glass is indispensable; the point of most accurate focus is where the image seems to melt into the ground glass. Preparations must be well differentiated and thin, possessing sufficient contrast and actinic opacity. In certain cases, by using glass of a complementary color to the stain, excellent results are obtained. While lamplight suffices for low powers, yet for the high powers or for difficult work, sunlight by all odds is to be preferred. By arranging a simple mirror to swing laterally and vertically, we can substitute the necessity for a heliostat. Light from this mirror passes through a plano-convex lens of 8 inches focus, through a cell of ammonia and sulphate of copper, to the substage condenser. Here, again, accurate centering and evenly distributed illumination are absolutely essential for good results. To those aspiring to the best results, especially with difficult subjects and high powers, a trial of sunlight is strongly urged, as by this illumination alone are many of the capabilities of photomicrography rendered possible.

Succeeding his address the lecturer exhibited on the screen about fifty examples of various kinds of work. Nearly half of these were photographs of pathological specimens; the remainder were photomicrographs of histological and pathological preparations, taken with objectives giving from the lowest to the highest amplifications, among which an admirable photograph of the bacillus tuberculosis attracted much attention.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, Thursday, May 6, 1886.

THE PRESIDENT, B. F. BAER, M.D., IN THE CHAIR.

DR. HOWARD A. KELLY read a paper on

ASEPSIS NOT ANTISEPSIS; A PLEA FOR PRINCIPLES, NOT PARAPHERNALIA, IN LAPAROTOMY.

Medicine, like other branches of science, has been most retarded in its growth by the accumulation of all sorts of useless details. Some of these incrustations still clog the advance of abdominal surgery, and will be given up with a notable diminution in the general percentage of mortality. I refer to the use of carbolic acid and mercuric solutions at the operating table, and to the continued use of any elaborate abdominal dressing.

The use of antiseptics in the patient's belly is full of danger and inconsistencies, for the following reasons: 1st. If used in strength sufficient to certainly prevent sepsis, the patient is very often killed along with the germs. I have myself seen death from carbolic acid poisoning. The *American Practitioner*, November, 1881 (p. 261), quoted by Dr. Goodell: "The first four cases done in the theatre at the beginning of last session had hæmorrhage from the kidneys and two of them died. I never had anything

like that before. It was purely carbolic acid poisoning; of that I have no doubt whatever." Thomas Keith speaks of several cases in his own practice, and references might be indefinitely multiplied. Regarding the use of bichloride solution, it is sufficient to say that its use has been very much curtailed in all maternity hospitals even as a vaginal wash. The line is here a very broad one, for the limit appears only to depend upon the most variable of all factors, the individual susceptibility.

2d. It is the great tendency of all operators, and in particular their assistants, to forget the principle involved, and pin their faith to the accidental means of establishing it. This can be seen abundantly illustrated in almost any hospital in the land, where a clean napkin worked around the joints and grooves of the instruments in use, or carried under the nails of the operator's fingers, will exhibit sad evidences of soil. Then, too, the actual conduct of the operator is often modified by the false sense of security begotten by the incomplete use of antiseptics. I saw this well illustrated by a surgeon of more than local repute. The case was a herniotomy, in which a large femoral sac was opened. The spray was throwing out a dense cloud, instruments and sponges were immersed in a two per cent. solution of carbolic acid, and elaborate dressings were ready. A coil of intestine protruded from the wound for several inches, and it lay, first, on the old hospital blanket below, and then, in the effort to reach the ring, was turned upon the night-gown above. The antiseptics was here made a farce by these and other glaring inconsistencies.

If germicides must be used at all, let it be before the operation, and in strength sufficient to neutralize any sepsis about instruments, sponges, etc. Then let the operator go to work with clean instruments, clean sponges and clean hands, and he will need no antiseptic, and the patient's belly will no longer be a battle-field where germs and solutions fight, often with such direful results to the host. It is my belief that it will not be long before the day of solutions will be past, and that in the future the successful surgeon will go to his work with pure water or dry pans for his instruments, and fluid enough to cleanse sponges. My own practice has been to use hydrant water boiled for an hour and allowed to stand, or better still, distilled water, as used by Prof. Schröder, and independently suggested and used by my friend, Dr. Joseph Price. I do not believe that reservoir water, dirty as it often is, ever contains any of the specific matter productive of septicæmia; but the process of boiling and using only the supernatant liquid makes it perfectly harmless.

Another fallacy discarded by some of the greatest operators but perpetuated by many, is the transference of the use of the elaborate Listerian dressings of general surgery to the abdominal wound. These dressings, so manifold and multiform, are clearly intended to prevent sepsis from penetrating the now closed abdominal wound. This is an accident which fortunately never occurs in the intra-peritoneal method. The rapid agglutination of peritoneal surfaces effectively closes the sac. A sterile dry pow-