

BARKER (T.R.)

A PRACTICAL APPLICATION

OF THE

Science of Obstetrics

BY

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REPRINTED FROM THE TIMES AND REGISTER, FEBRUARY 8, 1890.

PHILADELPHIA :  
MEDICAL PRESS COMPANY, LIMITED,  
1890.







## A PRACTICAL APPLICATION OF THE SCIENCE OF OBSTETRICS.

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IT is with a feeling of sympathy, mingled with a desire to relieve the anxiety which arises in the mind of every practitioner when called to attend his first few cases of confinement, that I take this opportunity to express, with brevity and perspicuity, the simple yet all-important methods employed in the lying-in chamber. In the department of obstetrics, no less than in every other branch of scientific medicine, it is the attention to minutiae which ultimately wins for the faithful the crown of success. Prompted by this thought, rather than with the idea of presenting anything new, permit me to proceed to a consideration of the subject.

Having been summoned to a case of confinement, the attendant should provide himself with a pair of long obstetric forceps, suitable for application at the brim; uterine dressing forceps; sound; applicator; a surgical case, and a supply of absorbent cotton.

Besides these articles, some corrosive sublimate tablets, a solution of carbolic acid, and several ounces of a reliable preparation of fluid extract of ergot. Soap and nail-brush must, of course, be included, for without the latter, asepsis is well-nigh impossible.

On reaching the patient's dwelling, his arrival should be announced as quietly as possible, lest loud talking and confusion annoy her. It is not expected

that he will tramp up the stairs as if marching to battle, nor yet slam the door with such violence that the house is shaken to its foundation.

The realization of the fact that one is in the chamber of a female, with a nervous system as delicate and sensitive as a galvanometer, upon whose index—the brain—is registered every sound and awkward movement, will assuredly check any tendency on the part of physician or nurse to jocularity. Be the normal nervous tension what it may, during gestation and parturition there is always a decided rise, amounting, oftentimes, to a condition of hyperæsthesia.

To dispel, therefore, the gloomy forebodings and depressing sense of impending danger, are among his primary duties.

By gracefulness of manner and gentlemanly bearing the obstetrician can alone hope to command the patient's respect and confidence, demonstrating thereby that he is not present to increase her distress by idle conversation, but rather to assist in relieving her suffering.

By giving his undivided attention to the clinical history of the case, he will secure an opportunity to overcome his embarrassment, which is certain to assume an aggravated form on entering the patient's apartment.

That the presence of an officious and loquacious nurse is to be deplored, none can deny, but upon no consideration must the attendant encourage this weakness, lest, by opening the flood-gates controlling her humor, he should be drowned in the freshet of his own making. Questions relative to the patient's general condition, state of bowels, appetite,

onset of pains, character and amount of urine voided, are very proper, and lie within her province.

The error of asking prematurely for the privilege of making a digital vaginal examination is very common. This is always to be regretted, for it is likely to occasion embarrassment on the part of both physician and patient, which may materially hamper the efforts of the former.

Any attempt on the part of the obstetrician to exaggerate the gravity of his patient's condition with the idea of magnifying his own skill, is worthy alone of severe condemnation and censure, since it is calculated to unnecessarily excite and alarm her.

If he frighten her, his position is a deplorable one, for she trembles at his very approach. Let her refuse his requests and his supremacy at the bed-side is irretrievably lost—a condition of affairs quickly recognized by the nurse, who, if she is like the majority one meets in the first few years of obstetric practice, will not fail to appreciate and take advantage of his altered position.

Therefore, if only to preserve his own professional dignity, it is very important he should not consider these apparently trivial matters unworthy of consideration.

The desired result can only be secured by asking, rather than commanding; requesting, rather than demanding; yet every sentence delivered in a tone indicative of firmness, tempered with kindness. By such means he will be able to gain every desired point without engendering the slightest fear.

Having counted her pulse, noted its strength and regularity, and made the above inquiries of the nurse, it is now desirable that he proceed to interview the

patient. At what time did the pains come on? Have they been increasing in frequency and duration? Where felt most severely? Has there been an evacuation of the bowels? If the reply to the question in regard to a movement of the bowels be negative, then he may direct the introduction of a glycerine suppository, which, by exciting the secretory and muscular apparatus of the intestinal canal, will cause the expulsion of the fæces in from ten to twenty minutes. Failing to procure a suppository, one may have recourse to an enema of one-half drachm of pure glycerine, repeated, if necessary; but a larger quantity than this at one time is injudicious, for it is apt to be followed by tenesmus and a sense of burning, and pain in the rectum. Occasionally the medicament excites, in addition, spasm of the bladder. As a substitute for the methods already suggested, one may give an enema of hot soap-suds—one half to one pint, with or without sweet oil, as seems most expedient.

The bladder, if distended, and micturition difficult and painful, should be relieved by the employment of the female catheter.

Interrogating the patient still further, he should endeavor to learn if there has been any escape of amniotic fluid, "the waters," thus gauging in a crude way the probable duration of the labor. Though answered affirmatively by the patient or nurse, he is not warranted in concluding that therefore the membranes have ruptured, for, as is well known, it is not infrequent that one finds fluid, amniotic in character ("vitriiform body"), escaping from between the amnion and chorion, previous to rupture of the

former. While this condition simulates rupture, it is not to be accepted as conclusive.

After duly considering the foregoing facts, the attention of the accoucheur should be given to an inspection of the mammæ. Beginning with the nipples, he should note their appearance — size, shape, prominence, sensibility. If depressed, his efforts must be directed to elevate them from their abnormal situation, by gentle traction. If excoriated or fissured, the employment locally of ol. morrhuæ several times daily, after drying, or unguentum belladonnæ, two drachms, ungu. zinci ox., one ounce, applied freely, will afford decided relief.

Local applications are of little service if the nipples are allowed to be irritated by the clothing, or subject to pressure. They must be kept dry and perfectly free from discharges, which, if allowed to continually bathe them, cannot fail to destroy the cuticle and excite inflammation.

*The mammary glands.*—As to their size, fullness, temperature, tenderness, existence of indurations, presence of milk. The advisability of extending his examination to include a physical exploration of the abdomen is sometimes doubtful, owing to the objections made by the patient; but when permissible, should never be omitted. For, by such means, the obstetrician is enabled to make out the position, whether the occiput is presenting (96 per cent.) anterior, or posterior; to the right or left side; or whether it is the breech which occupies the lower segment of the uterus.

Further, an opportunity is afforded to ascertain the size of the external pelvic diameters (normal, "external conjugate, seven inches, transverse, between

anterior superior spines of ilia, ten inches; at highest point on crest, ten and one-half inches"). The knowledge to be gained by auscultation of the abdomen is very important, for by such means it is possible to hear and count the number of heart beats, "120-140" per minute.

The sound is well described as closely resembling the ticking of a watch beneath one's pillow, only it is vastly fainter.

Should the foetus occupy the L. O. A. position, as the attendant will have discovered by abdominal palpation, then the sound will be heard loudest on the left side, at a point midway between the umbilicus and the anterior superior spine of the ilium.

On the other hand, if in the R. O. A. position, then at a corresponding point on the right side; while in the case of breech presentations, in the neighborhood of the umbilicus.

The recognition of the foetal heart sounds serves not only to confirm the presumptive and probable signs of pregnancy in the early stage of gestation, but also establishes beyond peradventure the fact that the foetus is alive. Having reached this point in the history of the case, the attendant is prepared to make a digital utero-vaginal examination. The position most comfortable for the patient during this ordeal is the recumbent, which may be dorsal or lateral, to suit her convenience. She should be instructed to lie on the right side of the bed, so that the obstetrician can use his right hand to the best advantage.

Absolute cleanliness of his hands is of vital importance. They should be washed thoroughly in a hot solution of corrosive chloride of mercury, 1-1000, and a nail-brush freely applied.

Finger rings should be removed, as they are very likely to carry infectious material in their interstices.

It is taken for granted that where one has been engaged in dissecting, or attending post-mortems, or cases of contagious diseases, he will peremptorily decline to serve in the capacity of accoucheur.

His hands having been rendered aseptic, they are to be carefully dried, and the index finger of the right hand anointed with some simple unguent, as petrolatum, unguentum zinci oxidi, or lard, if nothing better is procurable.

The patient being covered by a sheet, he introduces his index finger into the vulva, at the posterior commissure (one to two inches in front of anus), carries it directly backward until it impinges upon the sacrum, whereupon it is to be slightly withdrawn, and then elevated until the cervix is felt.

This procedure is very simple if one will but bear in mind that the vaginal canal at its inferior extremity is parallel with the plane of the pelvic brim, which makes an "angle of sixty degrees" with the horizon, while the superior portion corresponds to the axis of the pelvis, as indicated by "an irregular parabolic line, representing the sum of the axes of an indefinite number of planes taken at various levels of the pelvis."

The cause of embarrassment is usually due to a failure on the part of the examiner to carry his finger sufficiently far back before elevating. It should be remembered that the normal vault of the vagina is increased during the first stage of labor by the descent of the cervix further into the canal, induced by the weight of the fœtus and uterine muscular contractions. Hence, the finger, if not properly guided,

is almost certain to enter either the anterior or posterior pouch, where the os is sought for in vain.

Realizing the condition of affairs, one has only to sweep the finger forward or backward (depending upon whether it has entered the anterior or posterior pouch), when it will be felt rising over a fleshy ridge—the cervical wall—and dipping into a pit-like depression—the external os.

At the bottom of this shallow cavity, bordered by the lips of the cervix, the finger comes in contact with a thin, perfectly smooth, serous-like structure, the foetal membranes, which cover the orifice of the the cervical canal.

Pressing upon this elastic tissue, one recognizes the presence of a hard, oval body, which, while capable of temporary displacement upward, immediately returns on removal of the disturbing force. That it is osseous is evident, and by a longitudinal groove, the sagittal suture, running over the convex surface, one correctly concludes that it is the foetal skull—a vertex presentation. The effort necessary to discern the location of the fontanelles at this stage of labor, and so verify the diagnosis made after physical exploration of the abdomen, is not devoid of danger, as the vertex is engaged at the superior strait.

Further, the likelihood of rupturing the membranes would be considerably increased, which should be avoided, as the escape of the amniotic fluid—which serves as a dilating wedge—would retard the labor. When the attendant has satisfied himself as to the all-important diameters, transverse at brim; oblique of cavity, and antero-posterior at outlet; the expansibility of the vaginal walls, the presentation and the progressive dilatation of the cervix—he may

allow the patient unrestricted liberty in regard to the position she shall assume during this first stage. Should he, on the contrary, have ascertained that the external os is completely surrounded by bands of cicatricial tissue, the result, in the case of multipara of repeated lacerations, rendering further dilatation impossible, then, after waiting some hours to make sure that such is the case, he may employ forced dilatation by the introduction of the hand; this failing, he can, with a blunt-pointed tenotome, divide carefully the constrictions.

This operative procedure must be performed with due consideration for the anatomy of the parts, and the incisions not carried deeply, nor above the utero-vaginal junction, lest rupture follow.

The existence of an unruptured hymen sometimes occasions confusion in the course of a vaginal examination.

While this muco-muscular fold is usually ruptured in the first coition, it is not universal; especially is this true of the annular variety, which most frequently persists. It is just such cases which perplex the unexperienced.

One is easily led to believe that the edges of the tense hymen are the lips of the dilating cervix, strange as it may seem to those who have long since forgotten that there ever was a time when they knew absolutely nothing about the art of obstetrics, it is none the less true. But the problem is readily solved, for, by carrying the finger further into the canal, one recognizes by tactile sensation the os beyond, with presenting part in position. As the tense hymeneal membrane is likely to interfere with deliv-

ery, it is well to rupture it by forcible dilatation, or divide with a suitably guarded knife.

On concluding the examination, he should immediately inform his patient as to the probable course and duration of her labor, thereby speedily relieving her fears.

It is neither requisite nor necessary that he acquaint the patient with any doubts or misgivings he may have, unless they are of such a serious nature that allowing her to remain in ignorance would be to her detriment. The garments to be worn during her confinement should be as few and simple as possible, for a multiplicity of clothing is in the way and likely to become soiled.

An undershirt, nightgown, and long stockings are quite sufficient, and ensure the least exposure of the person. Chemise, drawers, and petticoats are not to be tolerated for a moment. If the patient's limbs seem cold, a heavy flannel petticoat may be buttoned under the mammæ, which, reaching to the knees, will serve to keep the abdomen and thighs warm.

*The making of the bed.*—Perhaps no simple procedure is susceptible of such variety as the arrangement of the parturient's couch. Individual peculiarities and early training have so much to do with the method employed that one is naturally led to believe that his way is the best—and perhaps it is best for him, for he has mastered its principles and accustomed himself to it. Notwithstanding this diversity of opinion and practice, the conscientious attendant has only to consider and carry out the means necessary to keep his patient warm, her clothing and bedding free from contamination by the discharges, thus ensuring her safety and comfort.

The plan which seems to fulfill these conditions most perfectly, is as follows: Remove everything from the bed except the mattress. On the right side, a little below the center, lay a folded, clean comforter; upon this a rubber cloth, one yard square. If the cloth be not procurable, then one may have recourse to newspapers. These should be spread out over the comforter, and allowed to overlap. Having arranged these protectives to avoid soiling the mattress, one takes a sheet and folds it lengthwise. Spread this smoothly on the right side, from head to foot. Tuck in both halves below, but only the under at the head. Care must be exercised in carrying out this plan, otherwise the free margins of the folded sheet will not be on the outer side, and the patient unable to get in her bed without great exertion.

Over the sheet is thrown a light blanket, and a pillow placed at the head. The right side, where the patient is to be confined, being prepared, one has only to raise the blanket and upper fold of the sheet to allow her to get in.

The left side of the bed is similarly arranged, save that a second rubber cloth is not required, as the discharges will be absorbed by the napkins. In employing this method, one practically divides the bed in half, confining the female on the right side, while the left is reserved clean and warm for her reception immediately after delivery. Another method, which has the advantage of greater simplicity, is, instead of folding the sheet, to roll it up under the patient's shoulders.

After removal of the secundines and blood clots, this is to be drawn down and tucked in at the foot.

A second sheet is thrown over the patient, when she is allowed to rest.

The labor having advanced considerably during the time consumed in the preparation of the bed, the female may be permitted now to assume the lateral or dorso-recumbent position, as best suits her fancy. Up to the present she has been granted perfect freedom, sitting or kneeling, as affords greater relief. It is neither necessary nor desirable that she lie down before dilatation is complete.

The wisest course is not to insist upon the patient's occupying any arbitrary position, but rather seeking to discover what position gives her most comfort.

In regard to this point most text-books are misleading, for careful and thorough investigation has only served to further encourage the belief that there does not exist what might be designated as a physiological position common to the parturient. Experience clearly teaches that no two women assume, throughout their labor, identically the same position. Nor does the same female, in subsequent labors, choose always the position she occupied in preceding confinements.

Some prefer to pass the stage of dilatation on their knees, the body bent forward, head supported by hands. Others squat; still others lie on their side or back. Occasionally a ventral position is more satisfactory, seeming to moderate the pain referable to the loins. The natural position, if the phrase is allowable, is the most unnatural. Having put the patient to bed, the attendant should again examine the cervix, to make sure that dilatation is progressing.

Everything being normal, and the head well engaged, he may direct his attention to the garments prepared for the coming offspring.

A bandage of soft flannel, about five inches wide and eighteen inches long, with safety pins in abundance, must be at hand.

Flannel underwear should be near the fire to warm.

In addition, he will require thread to tie the cord (several strands of strong spool-cotton, or black silk); also vaseline, or some other simple unguent, with which to anoint the infant, thereby facilitating the removal of the vernix caseosa. Hot water has not been forgotten, nor a suitable tub in which to bathe the child. Soap, of a non-irritating character—as glycerine—will further assist in relieving the body-surface of this sebaceous deposit. Care must be exercised, however, to prevent getting it into the infant's eyes. The room, if kept at a temperature of 70° F., will usually be found sufficiently warm; but the degree should vary according to the feelings of the individual. All dejecta must be immediately taken from the room. It is, moreover, the duty of the obstetrician to see that it is done.

A change of linen for the female should be kept warm and ready for use in case of emergency.

All spectators and other busybodies must be politely but promptly excluded.

Napkins containing aseptic cotton, or other absorbent material, rendered so by impregnation with some antiseptic, should be within reach. If the patient express a desire to have an abdominal bandage applied after delivery, the attendant need not offer any objections, as the disadvantages so loudly proclaimed by some practitioners would seem to be open to

serious question. Thus far the attendant has been engaged in preparing for the coming offspring ; now, however, he must be ready to receive it. He has already noted that the expulsive pains are more forcible and prolonged ; that the membranes are bulging from the external os. Suddenly the latter ruptures, and a quantity of the liquor amnii escapes. A pain, more violent than any heretofore experienced, quickly succeeds, and the female distinctly feels the resisting presenting part move through the cervical canal into the vagina. The occiput, at the same time, he will find, has rotated from the transverse at the brim, to the oblique of the cavity, to be followed, on reaching the outlet, by rotation into the antero-posterior.

The occiput, in the "first position," he will notice, emerges from under the pubic arch, while the face sweeps over the perineum when the head is born. A finger, if pushed up into the armpit of the infant, and traction made, will materially assist in the delivery of the trunk.

The perineum, if inelastic and abnormally tense—like an old piece of india rubber—is almost sure to tear from over-distention, in spite of all the multitudinous methods devised for prevention.

While experience only too clearly proves the truth of this statement, it is not offered as an excuse for lacerations due to a lack of care on the part of the attendant, nor to cases where there has been undue haste in delivery by the employment of mechanical or medicinal means.

The advantages of chloroform by inhalation, in difficult and tedious labors, are very great, especially when there exists a tetanic state of the muscular walls of fundus and body of the uterus before dila-

tation is complete. Here it has a most happy effect, allaying the excitement of the patient, and relieving the spastic contraction of the circular fibers of the cervix. The danger which attends the administration of chloroform in surgery, it would appear, is absent or very slight in obstetrics; one should, however, bear in mind that this drug is somewhat uncertain as to the degree of its activity, and may, when least expected, give rise to alarming symptoms. Appreciating this fact, it is more judicious to await positive indications for its employment before having recourse to such a fickle friend.

After delivery of the head, there is not usually any difficulty in expulsion of the trunk, though the bis-acromial diameter averages four inches, hence greater by three-quarters of an inch than the sub-occipito-bregmatic. This apparent discrepancy is, however, easy of explanation, if one will but pause and consider the tissues in this region. They are principally muscular, not osseous, as in the skull, and therefore susceptible of greater compression and resultant reduction in dimensions.

The child having been delivered, it is advisable for the attendant to carefully remove, by means of a soft towel, the discharges which have accumulated in the mouth and nose of the infant in its passage along the canal, as they are likely to interfere with respiration.

Division of the umbilical cord by the scissors or knife is not to be recommended before pulsation of its vessels has ceased.

Should delivery be prevented on account of an abnormally short funis, or to its being coiled several times around the infant's neck, it then becomes

obligatory to sever promptly, and hasten expulsion. The foetal portion of the cord should measure from an inch to an inch and a half in length, which will allow plenty of room for ligation. By expressing "Wharton's jelly," one lessens the amount of organic matter included in the ligature, thus rendering separation more rapid.

It is a matter of slight importance whether the attendant apply a ligature or clamp to the material end of the cord, as the bleeding is rarely profuse; at the same time it is of some advantage, for the persistent oozing from the severed vessels is very likely to soil the patient's person and bed.

While as yet the evidence is not sufficient to warrant one in declaring that tying of the material end of the cord hastens separation and expulsion of the placenta, yet there are not a few trustworthy observers who incline to this view.

Having tied the cord, the attendant hands the child to the nurse, who should proceed to anoint it and prepare the bath.

The attention of the obstetrician should now be directed to securing firm contraction of the uterus. He should place his hand on the abdomen immediately over the fundus, in order to stimulate uterine contractions.

He feels the uterus diminish gradually in volume, until it is reduced to the size of a cricket ball, and scarcely less firm and resisting, rising about two inches above the pelvic brim. There has, of course, been some blood expelled with the foetus, but, unless excessive, need occasion no alarm. The amount of blood appears greater than it really is, being mixed with a large amount of amniotic fluid. If the attend-

ant will only see to it that the uterus is well contracted he need have no fear of post-partum hemorrhage. The third stage of labor, delivery of the afterbirth, is usually a very simple one; especially is this true where the placenta and membranes are expelled.

It is not wise for him to attempt to shorten this stage by meddlesome interference, lest he induce the very complications he most desires to avoid. By waiting fifteen, or even twenty minutes, before introducing his hand into the uterus to separate and remove the placenta, he will more perfectly ensure the prompt recovery of his patient.

In many cases where the placenta is not expelled, it will be found folded and lying half within and half without the uterus.

He should exercise great care in his examination of the afterbirth, to assure himself that no portion of the placenta is left adherent to the uterine wall, as such a condition of affairs would be very likely to be followed by putrefactive changes and attendant septicæmia.

Though the attention of the accoucheur has been directed to the care of the child and the condition of the uterus, he should not fail to watch the effect of such a prolonged strain upon the mother.

If she should feel faint he must administer a few drops of the aromatic spirits of ammonia in water, or inhalation of the vaporized carbonate.

If nausea and vomiting occur, a drachm or more of one of the effervescing bromides, or a cup of hot tea without milk, will serve to allay the gastric irritability. Pain and swelling of the vulva in some females occasions great distress, which can be con-

trolled by the application of hot wet or dry cloths to the parts. Should there be any prolapse of the bowel, the result of straining during the labor, the mucous membrane should be oiled and gently returned. The dressing of the cord, while a very simple matter, is one susceptible of a considerable display of skill.

A method worthy of more general adoption is as follows: Take a piece of old, clean, soft linen, five inches long (may be of more than one thickness), and three inches wide. Cut a hole the size of the cord a half inch nearer the end, which is to be the lower when applied. Through this hole pass the cord, fold in the sides over it lengthwise, so that they overlap. Now turn up the lower end and down with the upper, much as one would fold a powder paper. Each day a smaller piece of linen is to be cut and passed under the first. Any irritation of the skin beneath may be allayed by dusting with pulverized carbonate of zinc or boracic acid. The nurse having applied the binder and fastened it with safety pins, the child should be laid in a warm situation until the mother is prepared to receive it in the bed with her. The attendant, while supervising the dressing of the infant, must not forget to watch the mother's condition.

Should her face become blanched and syncope be threatened, he must at once examine for hemorrhage and assure himself that no such complication exists before giving up his search.

Uterine hemorrhage can scarcely occur if firm contraction of the organ be attained, unless there co-exist laceration. This is easy of comprehension, if we study the arrangement of the vessels and distri-

bution of the layers of muscular fibers which comprise such a large part of its tissue.

The successful treatment of post-partum hemorrhage (a very common complication after delivery, and in the vast majority of cases due to uterine inertia), demands prompt and decided measures on the part of the attendant, or his patient will be a corpse before he awakens to a realization of the facts. The attendant must at once apply to abdomen and uterus ice or hot water; turn out all clots from the latter; never tampon the vagina, as it only converts the uterus into an elastic sac into which all the life blood will quickly drain. Astringent injection of vinegar, or diluted Monsell's salt, if simpler means fail. Internally, extractum ergotæ fluidum, in full doses, repeated every few minutes. Failure of circulation must be met by aromatic spirits of ammonia, brandy, whiskey. Hypodermically, one drachm of ether in thigh, or abdomen. Introduction of the hand into the relaxed uterus will not infrequently excite contraction. Patient's head must be kept low; elevate foot of bed; but above all get the uterus to close the lumen of the vessels by contraction of its muscular fibers. Having avoided post-partum hemorrhage by care and judicious management, or controlled the flow, nothing will so quickly revive the patient's exhausted vitality, the attendant will find, as an abundance of pure, fresh milk, with or without brandy, as seems most expedient. Absolute quiet is essential to the patient's recovery, and the room should be darkened somewhat that she may not be annoyed by the glare of sunlight and also secure much needed rest. The binder may be applied

only sufficiently tight to give comfort, and fastened with safety pins.

A fluid diet is to be given the female for a few days, when a full but selected dietary may be substituted. The obstetrician should see his patient again in some five to six hours; longer than this is not to be recommended. Directions must also be left to notify the attendant if hemorrhage recur, or any alarming symptoms arise. The nurse takes a record of pulse, respirations and temperature, as directed, and uses the catheter at stated intervals. With a parting injunction to the nurse to call him immediately if hemorrhage occur, the attendant should bid adieu to his patient, even as we must this subject, leaving experience to teach him what no pen can write, nor tongue can tell, so eloquently as those little multipolar cells in each individual brain.

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