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THE RELATION OF DRESS TO PELVIC DISEASE.

The questions as to the relations of dress to disease are assuming larger proportions, and taking a more healthy hold upon the minds of laymen; and as laymen become more interested in them, and ask for more knowledge, the more information must medical men have to impart, if they would take the position they should occupy as instructors of the public in preventive medicine. The readers of THE JOURNAL will remember the very interesting address of Dr. D. Hayes Agnew, at the last meeting of the American Surgical Association, on "The Relation of Social Life to Surgical Disease."

The most recent contribution to this subject is a paper read at the last annual meeting of the Michigan State Medical Society, by Dr. J. H. KELLOGG, on "Experimental Researches respecting the Relation of Dress to Pelvic Diseases in Women." For many years it has been asserted, though on inaccurate and therefore unreliable data, that the modes of dressing in vogue among civilized women constitute an important etiological factor in the production of various forms of pelvic disease peculiar to the sex. Dr. Kellogg now contributes the results of some investigations that he has made; and it may be said that his opportunities for experimentation are excellent. He considers his results under five heads: 1. A comparative study of the function of respiration in civilized and uncivilized women. The means of investigation employed for exact comparison were the pneumograph and the kymographion, or recording cylinder. 2. Studies of the influence of

respiration upon the pelvic organs, as shown by the tracings obtained by means of an inflated air pessary in the vagina connected with a recording tambour and cylinder. 3. Observations upon the influence of constriction of the waist upon intrapelvic pressure as measured by a peculiar form of mercurial dynamometer, to be described in this paper. 4. Observations of the amount of external pressure exerted by a tight corset, tight bands, or other form of constriction of the waist, as recorded by the dynamometer. 5. Direct measurements of the amount of displacement of the uterus produced by constriction of the waist, the measurements being taken with an instrument devised for this purpose.

In regard to respiration in civilized and uncivilized women, it has been held for a long time that there are two distinct types of respiration in human beings, characteristic of the two sexes: abdominal and costal—and physiologists asserted that adult males breathe chiefly with the lower portion of the chest, while women breathe chiefly with the upper part of the chest. Nine years ago Dr. Kellogg wrote: "It is undoubtedly true that most women do breathe almost exclusively with the upper part of the chest; but whether this is a natural peculiarity, or an acquired, unnatural and depraved one, is a question which I am decidedly inclined to answer in harmony with the latter supposition, basing my conclusion upon the following undeniable facts: 1. In childhood, and until about the age of puberty, respiration in the boy and the girl is exactly the same. 2. Although there is a change in the mode of respiration in most females, usually soon after the period of puberty, marked by increased costal respiration and diminished abdominal or deep respiration, this change can be accounted for on other than physiological grounds. 3. I believe the cause of this modification of respiration is the change in dress which is usually made about the time of puberty. The young girl is now becoming a woman, and must acquire the art of lacing, wearing corsets, 'stays,' and sundry other contrivances which will aid in producing a 'fine form.' 4. I have met a number of ladies whose good fortune and good sense had delivered them from the distorting influence of corset-wearing and tight-lacing, and have invariably observed that they are capable of as deep respiration as men, and practice it naturally. I am thoroughly convinced that this so-

called physiological difference between man and woman is really a pathological rather than a physiological difference. In short, I believe that the only reason why women do not, under ordinary circumstances, breathe as do men, is simply that they cannot breathe naturally." Dr. Kellogg's many recent observations tend to confirm the views thus expressed.

Observations made upon Chinese women in San Francisco showed that in them there was nothing of the costal type of respiration; the abdominal breathing was as prominent in them as in males that lead sedentary lives. Observations made among the Yuma Indians showed no differences between the male and female respiration. The same results were obtained among the Chickasaw Indians. The tracing of the respiratory movements of a Scotch woman that had never worn a corset, given in Dr. Kellogg's paper, shows a decidedly abdominal type of respiration.

Physiologists have attributed the supposed female type of respiration to the fact of gestation. But Dr. Kellogg's observations with the pneumograph contradict this view. Respiratory tracings of *normal* women in the pregnant state show that the breathing is abdominal. In short, the whole matter may be thus summarized: "The so-called female or costal type of respiration, which prevails among civilized women, is the result of their restricting and unphysiological mode of dress, and is not due to the influence of gestation."

If it be admitted that the normal respiratory type in the female is the counterpart of that in the male, it must be evident that respiration in the female has an important influence on the pelvic organs. Illustrating this are some interesting tracings, made by means of an air pessary connected with a tambour, the movements being recorded upon a revolving cylinder. The facts of interest elicited by observations of the influence of respiratory movements upon the pelvic viscera are: 1. There is a normal movement of the pelvic viscera corresponding to the movements of respiration. 2. These movements are lessened by the constriction of the waist, inducing the costal type of respiration, as the result of two factors (*a*) the lessened movements of the diaphragm, and (*b*) the downward displacement produced by the pressure of the corset upon the abdominal walls.

By the use of an ingenious instrument of his own construction, Dr. Kellogg shows that con-

striction of the waist has a very marked influence upon intrapelvic pressure. He has found that the average pressure exerted at the waist by a tight corset or tight bands is, in ordinary respiration, about .3 of an inch of mercury. It was found, also, that the movements of the uterus up and down in ordinary breathing are from .1 to .3 of an inch. Coughing or deep breathing, straining, and other similar movements may increase this to .5 inch. By the application of the corset, or other constricting means, the uterus is lowered in the pelvis from .2 to .5 of an inch.

The more one studies humanity in the natural state, the stronger becomes the conviction that woman is not physiologically weak and prone to pelvic disease, and that the chief element in civilization that causes pelvic diseases in the female is the dress of civilized females. The student of zoology cannot admit that the human female alone is normally of a very different type, as regards one of the chief functions of animal life, from the male. And if there is something in our civilization that deforms and predisposes to disease the mothers of our men, the sooner we reform that something, and improve it out of existence, the better for the race.