with micro-organisms belonging to the typhoid and colon group the more careful we become in saying when and where we have to draw the line.

COLD WEATHER ACCOUNTABLE FOR TURBIDITY OF THE URINE.

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It is common to find a certain percentage of freshly voided urines to present, upon examination, a variable degree of clouding which may have for its cause many different conditions. Among the most striking of these are those dependent upon thermic fluctuations, and in this connection reference shall be made to the changes produced by exposure of the urine to a temperature near the freezing point. With the approach of marked climatic change and a decided fall in the mercury, the number of turbid specimens collected from private practice and dispensary clinics is greatly increased, while specimens collected from hospital patients are seldom influenced by cold. In the urines brought to the laboratory of the Philadelphia, Pennsylvania and Medico-Chirurgical hospitals during the fall and winter months, the writer seldom observed any increase in the number of turbid urines. It was often noticed in specimens brought by patients to the dispensary of the Howard and Medico-Chirurgical hospitals, as well as in those sent to the laboratory by physicians, collected from their private practices. It was further observed that where two specimens, a morning and an evening, were studied, the evening urine would be found turbid, while the morning specimen appeared normal, and when the morning urine was the older of the specimens the reverse was frequently found. It occasionally happened that the patient had inspected the urine before leaving home and noted its clearness, but after carrying the bottle exposed to the cold for a time, it was found turbid on reaching the laboratory. The common cause for this extreme turbidity is the presence, in such specimens, of amorphous urates which on exposure to certain thermic changes are thrown out of solution, the degree of turbidity and consequently the color and consistence of such urine varying in direct proportion to the amount of urates precipitated. The naked eye may detect a slight finely granular clouding of a grayish-white color, which on close inspection is indistinguishable from that occasioned by amorphous phosphates. This precipitate may become sufficiently dense as to present a thick, heavy, pus-like sediment at the bottom of the bottle, which is seen to rise in the form of a thick ropy cloud when agitated. More common is it to find the clouding of a reddish or yellowish tinge, in which case the opacity varies from that scarcely perceptible to that of a thick yellowish-brown or dark-red color with the consistence of syrup. On standing, the lower portion of the urine may be occupied by this sediment, while immediately above it is a narrow zone of either clear, cherry, or wine color, while the remainder of the urine is highly colored. Turbidity directly ascribable to urates is a common finding in the urine of persons suffering from rheumatism, acute bronchitis, tonsillitis and allied febrile conditions, but is by no means rare in the urine of those apparently in perfect health, and during the period of gestation. In nearly 400 specimens where the turbidity was in part or entirely the result of exposure to cold, it was found that the features above

given were present to a variable degree. The specific gravity ranged from 1018 to 1045, while fully two-thirds of this number were between 1023 and 1033. In striking contrast to what is usually expected in turbid urines, these specimens were exceptionally free from albumin; but two of them showed this body (serum albumin) in considerable amounts. In none of the specimens was a positive reaction for sugar obtained. Fehling's and the fermentation tests were employed. On several occasions there were reactions which simulated that of glucose, with Fehling's reagent, but these were not typical and could not be confirmed by the fermentation test.

Turbidity or opalescence, the result of an excess of amorphous urates, disappears upon the application of heat. A test-tube is filled one-third to one-half its depth with the suspected urine, and the upper one-third of

the column of urine is passed over the flame of a Bunsen burner and heated to a temperature nearing that of the boiling point. The clouding due to urates disappears from the portion of the urine to which heat is applied, before the boiling point is reached, while the unheated portion of the column remains unchanged.—See illustration. By the addition of a few drops of acid to such urines we may cause the precipitation of uric acid, commonest in the form of rhombic plates, but this procedure can scarcely be regarded as one of practical value. In the teaching of clinical diagnosis there appears to be but few substances that are met with more frequently than the one here under discussion, and the reaction thus obtained proves a most satisfactory safeguard against confusion. The more common causes of turbidity to be differentiated from that due to urates are those dependent upon phosphates, bile pigments, pus, mucus, serum albumin with red blood

cells and many granular casts, and urines containing an admixture of vaginal secretions. It may be added that none of these substances clear upon the application of heat as herein outlined. In biliary urines it was commonly seen that the upper portion of the column cleared when heat was applied, but the color resulting from the bile pigments remained unchanged. Microscopic study assists in distinguishing, beyond any possibility of a doubt, substances likely to be mistaken for amorphous urates. However, we are forced to resort to chemical measures in differentiating between amorphous urates and amorphous phosphates. Albumoses coagulate at about the temperature at which urates are returned into solution, but it is improbable that it would be capable of conflicting in any way with this reaction.

ON THE TREATMENT OF OBESITY.*

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A rational therapy of polysarcia is only possible on the basis of a more precise differentiation between the principal types or degrees of this metabolic anomaly.

A number of authors have attempted to distinguish between the forms of corpulency. The classification of Immermann¹ into the plethoric and the anemic types, partly on account of a certain clinical justification, but mostly on account of its adoption by Oertel,² is the best known and enjoys universal acceptance by later writers on the subject. This differentiation, however, is one of degree more than of character, and, in advanced cases of obesity when pronounced degenerative changes have taken place, the one type can not be distinguished from the other.

Guided by the external appearance, Immermann assigns the cases to one of the two categories: 1, to the plethoric group he refers the instances occurring in the robust; 2, to the anemic class, those obese individuals who display a weakened muscular system. In the following I have delineated some characteristics of the two forms—in their extremes:

	PLETHORIC TYPE.	ANEMIC TYPE.
Occurrence:	more frequent in males;	more frequent in women.
Corpulency due to:	hyperingestion of foods and liquids;	deficient oxidation.
Appetite:	excessive;	impaired.
Appearance:	ruddy;	pale.
Endurance:	little if at all reduced;	excessively diminished.
Body temperature:	normal;	frequently subnormal.
Integument:	smooth, greasy;	rugose.
Muscular system and adipose:	firm;	flaccid.
Heart:	vigorous (bradycardia in advanced stage weak and arrhythmic);	feeble.
Arterial tension:	increased;	lowered.
Blood (hemoglobin and corpuscles):	abundant;	deficient.
Edema of lower extremities:	infrequent;	frequent.
Urine:	abundant;	diminished.
Accompanying conditions:	lithemia, oxaluria;	dyspnea.
Tendency to:	arterio-sclerosis;	hypostatic congestion of lungs.

It is obvious that in their extremes these two clinical pictures exist more infrequently than in their intermediate degrees—conditions of corpulency partly resembling the one, partly the other type. The vast majority of instances of lipomatosis belong neither absolutely to the

"plethoric" nor to the "anemic" form, and therefore do not permit of a definite classification. Inasmuch as a differentiation is often impossible, the value of the Immermann-Oertel classification, for practical and especially therapeutic purposes, is quite limited and besides often problematic.

CORPOREAL SPECIFIC GRAVITY AND POLYSARCIA.

Sometime ago I attempted to demonstrate that the volume weight of the animal body discloses, with a high degree of certainty, the physical condition of its structures.³

Fat is the only important tissue constituent which possesses a lesser degree of density than water. Adiposis causes a reduction of the specific gravity of the organism, and that, in the same ratio in which the increase of fatty material has taken place. Polysarcia, however, in spite of its name—much flesh—is neither always dependent upon an increase of the corporeal solids nor upon the relation of protoplasm to fat; it is frequently but the consequence or the manifestation of tissue hydration, and of the increased contents of water in the organism. In other words, rotundity of the body may be due to an absolute increase of protoplasm, to one of protoplasm and fat, to an absolute increase of fat alone, or to an increase of the liquid tissue constituents either *per se* or together with fatty deposits.

The specific gravity of an individual in a given case of polysarcia, is, therefore, dependent upon the following possible factors: 1, protoplasm +, total inorganic solids +; 2, protoplasm +, fat +; 3, protoplasm stationary, fat +; 4, protoplasm —, fat +; 5, protoplasm —, fat +, H₂O +.

It is not my intention to dwell upon the polysarcia-corporeal density relation at greater length. Some of my pertaining investigations will be published in the course of the year. Those who are interested in the subject, I refer to my article in the *Medical Record* of February 9, 1901. The few facts, however, which I have related in the foregoing make it evident that the Immermann-Oertel differentiation, as a basis for rational treatment, is without any doubt inadequate and superficial.

Classifications according to the increase in absolute weight, into very pronounced, moderate and slight corpulency, may serve a purpose, if denoting the obesity degree of a certain type. In differentiating between certain obesity forms, the degree classifications are illogical, and, to say the least, useless for therapeutic intents.

The determination of the volume weight of an individual would be but rarely practiced and the corporeal specific gravity would hardly ever become a factor in physical diagnosis if, to ascertain these, we were compelled to employ any volumetric device or tedious mathematical calculations. However, the density of the blood may well serve as an indicator of corporeal density. A series of observations on men, conducted by the writer, has pointed out that the volume weight of an individual in the physiologic as well as in the pathologic state, is reflected in the specific gravity of his blood. That is, that a high blood density corresponds with a high body density, and a non-transitory hydremic condition with a low corporeal specific gravity. Congruous density degrees of blood and body, it is true, were rarely found. Again, the deviation between the two specific gravities in every instance was so slight that it seems rather due to shortcomings in the methods utilized in ascertaining the densities of both blood and body, than to an abnormal

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