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KUMYSS—ITS VALUE AS A FOOD AND RE- CONSTRUCTIVE.

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My object in bringing this paper before you, is to call your attention to the valuable dietetic properties of kumyss and to give you the results of my experience with a new kumyss preparation, called "Kumyssgen" (a kumyss in a dry form).

HISTORICAL SKETCH.

From time immemorial the Nomad tribes of Southern and Eastern Russia and Central Asia, have prepared and used kumyss. Herodotus gives an account of it as used by the Scythians, Virgil sings of a tribe who drank it. Perhaps, the first mention of it by name, may be found in "Ipatof Annals" published at St. Petersburg in 1871. In 1182, Prince Igor Seversky was taken prisoner by the Polobtsy and the captors got so drunk on kumyss that they allowed their prisoner to escape. The old monk and traveller Wm. de Rubruquis, in the thirteenth century, was the first one who wrote a distinct and admirable account about kumyss and its action, its taste and preparation. He says: "The same evening the guide who conducted us, gave us some *cosmos* (which he call the drink). After I had drank it, I sweat most extremely from the dread and novelty, because I never drank it before. Notwithstanding I thought it very savory and indeed it was." And in another part of his travels, he thus refers to it: "Then they, the Tartars, tasted it and being pretty sharp, they drank it, for it biteth a man's tongue like wine of raspberries, when it is drunk. After a man has taken a draught thereof, it leaveth behind it a taste like that of almond milk, and it maketh one's inside feel very comfortable, it also intoxicates weak heads." The next writer to refer to kumyss, is Marco Polo, the Venetian, in his "De Regionibus Orientalis." "Their drink is mare's milk prepared in such a way, that you would take it for a white wine, and a right good drink it is, called by them 'Kemiz'."

For nearly 500 years after these old travelers wrote, no mention of kumyss, so far as I am aware, is to be met with in European literature, and it is only towards the end of the eighteenth century, that it is again brought into notice. Thus Strahlenberg was the first, after de Rubruquis, to give a description of the preparations of kumyss, but his method, although borrowed from and said to have practiced by the Kalmucks, seems to have been unsuccessful. Neumann, a German, and Voltenlau, a

Dutch chemist, proved equally unsuccessful in their attempts to explain the nature and causes of fermentation in mare's milk. Pollas while mentioning kumyss, in his travels, also states that the Tartars, during winter, when mare's milk fails them, prepare a wine from cow's milk. Gmelin gives an account of the distillation by the Nomads of a spirit from milk, while Oxeretskowsky in 1778, sent a graduation thesis to the Academy at St. Petersburg. (These last two writers wrote only about the spirit obtained from kumyss, and not about kumyss itself.) All these travelers and authors spoken of, considered kumyss to be simply the intoxicating beverage of said Nomad tribes. No one appears to have been impressed by its remarkable nutritive qualities, since no one seems to have regarded it in the light of a food. The credit of being the first to estimate the importance of kumyss as an article of diet, and of discovering its uses, as a therapeutic remedy, belongs to Dr. John Grieve, a surgeon, one of the many Scotchman who have, from time to time entered the Russian service, and who in 1784, wrote a communication to the Royal Society of Edinburgh, entitled, "An account of the method of making a wine, called by the Tartars, kumyss, with observations on its usage in medicine." And he thought that "With the superaddition of a fermented spirit, it might be of essential service, in all those disorders where the body is defective either in nourishment or strength." And he further proved the benefit of the milk wine on three patients, two of whom were consumptives, sending them to the steppes among the Tartars, from where they returned stout and in perfect health. After the return of these first patients, sent to Tartary, Grieve commenced making kumyss himself.

At the beginning of the present century Dr. Haeberlin gave an excellent description of kumyss; he being a consumptive, tried its therapeutical effects on himself for 13 long years. From the year 1811, when Haeberlin's communication was posthumously published, until the year 1857, several treatises on kumyss are to be found scattered through various Russian and German periodicals, lay and medical.

But in 1858, Dr. Postikof started an establishment for the cure of diseases, by fermented mare's milk, at Samara, in Eastern Russia, and a similar establishment about 45 miles distant, was started by the late Dr. Tchambulatoof, both of which have been extremely well patronized by patients from all over the world. So successful were they, that the Russian government, in 1870, started a place of their own for the cure of sick soldiers, belonging to the Kazan district. Here were provided 120 beds, and at this little hospital, the surgeons began their experiments with the kumyss cure, which proved thoroughly successful. Various diseases were treated and the hospital was still in existence after ten years' trial.

The first persons to test the value of kumyss in

hospital practice, were Dr. Neftel, who in 1859 treated 15 soldiers with it, in the Orenborg Military Hospital, and Dr. Zeland, who in 1861 accompanied a party of phthisical soldiers sent by the Russian War Office, to drink fermented mare's milk in the Bashir Steppes. Both of these surgeons spoke highly of kumyss, in the admirable essays published by them on the subject.

In ending this imperfect sketch of the history of kumyss, a few words in regard to its literature, during the last few years, may not be out of place. From 1858 to the present day, several excellent pamphlets and articles were published on kumyss, embodying the experience of those who had been in the steppes, and who had carefully and dispassionately investigated its action in disease, and it is a fact that since John Grieve's time, not a single medical author, practically acquainted with kumyss, has failed to give it full praise, as the best known remedy and reconstructive agent, in all wasting diseases. The writings of Drs. Grieve, Haeberlin, Homenko, Dahl, Maydell, Ucke, Stahlberg, etc., etc., bear witness to what has been stated, and display in their praises of kumyss, a unanimity of opinion quite exceptional in the history of therapeutic remedies. In a few rare instances, where we find kumyss disparagingly spoken of, it is by authors who had no practical knowledge of its uses.

KUMYSS PREPARATIONS.

The curative properties of mare's milk induced physicians and chemists to try cow's milk, which is so much easier to procure, for making kumyss. It was successfully tried and a new food and drink was given to the civilized world. Dr. Jageliski says, "I consider cow's milk an equally good raw material, if not better than mare's milk for the preparation of kumyss;" while Dr. Landowski regards the richness of cow's milk as advantageous when compared with mare's, to the invalid, who absorbs a larger quantity of nutritive material; then came a preparation, made by fermenting a mixture of cow's and asses milk, which made an excellent substitute for kumyss, and a new name was coined for it, which may be applied to all fermenting milk, "Galazyma," taken from the Greek. For particulars, I would refer you to a little work, by Dr. B. Schnepf, of Eaux Bonnes, entitled "Traitment efficace par le Galazyme des effections catarrhales, de la phthisie et des consumptions en general, Paris, 1865."

I will not dwell on the methods of the manufacture of kumyss, as it can now readily be obtained prepared for use; in fact, I would advise against its preparation in the household, or by the physician. The operation is a delicate one, it requires special knowledge and appliances for regulating temperature, etc. The new preparation, "kumyssgen," being in the form of a dry powder, can be sent everywhere, and the preparation of an excellent kumyss from it is a very simple matter.

The milk of various animals is made use of, besides that of the cow, namely: the goat, the ass, sheep, camel and mare. Milk is used as it is drawn, or in the form of whey or curdled. Ghee is a favorite beverage throughout all India. It is a stale butter, clarified by boiling and straining. When it is set aside to cool, it remains in a semi-liquid or oily state, and is used as a drink and in cooking by the natives. In milk-beer, milk is substituted for water.

Kef is a kind of effervescing fermented milk, resembling kumyss, which is made at Samara. Yamanet is a favorite drink in Constantinople, made by curdling milk in a peculiar manner. Syra is a sour whey used as a drink like small beer in Norway and Iceland. Aizen and liban, both forms of kumyss, are made one by the Tartars, the other by the Arabs. Kefir is another fermented beverage, prepared in the mountains of the Caucasus from cow's milk. This fermentation process is brought about by a micro-organism, the *Dispora Caucasicus*, which is added to the milk; it possesses the property of converting the milk sugar into alcohol, carbonic acid and lactic acid.

WHAT KUMYSS IS.

We know that kumyss is a highly effervescent, slightly acidulous beverage, made from milk by a peculiar process of fermentation. It contains the casein, the most nutritious element of milk, in a form in which it can be much more readily digested and assimilated.

The principal changes which milk undergoes, when converted into kumyss, are: the milk sugar is partly converted into lactic acid, carbonic acid and alcohol, the albuminoids are partially peptonized, and the remainder separated into such a finely divided state that the digestive fluids can readily act on them. As the above changes are constantly going on in kumyss, we can readily see that it is not at all stable, that its composition is constantly changing.

While in the first stage, when still somewhat sweet and only gently effervescent, it is called *mild kumyss*, similar to kumyss made from kumyssgen, when freshly prepared. This, in the course of a few days, passes into the *strong kumyss*, decidedly acid and highly effervescent. While in the intermediate state it is called *medium kumyss*. All these conditions are under perfect control by the use of kumyssgen.

Kumyss when taken in large doses, should not be administered too cold. Except in cases of severe and uncontrollable vomiting, it should be given with the chill off, and will then be found very easy to digest. This point I want to impress on you, particularly when used in pulmonary phthisis, where the consumption of large quantities of kumyss is required, and where the nearer the temperature of the ingested fluid approaches that of the blood, the sooner and easier will it be absorbed and digested. A temperature of about 60° Fahrenheit is found to be the best.

The next question is, in what quantities shall kumyss be taken? The first precaution to be observed is that the quantity should never exceed what the invalid's stomach can easily digest, and will also depend upon the disease for which kumyss has been prescribed. As a food, any quantity can be taken by a healthy individual.

Regarding the physiological action of kumyss and its many therapeutical applications, I must refer you to the literature on the subject, as the allotted time for the reading of this paper is limited.

Some of the therapeutical applications, both as a special addition to foods and as a reconstructive, which I have made with kumyssgen. We know that there are diets suited to every age, to every climate, to every species of work, physical and mental; there are diets by which diseases may be prevented and cured; diets beneficial to some constitutions and injurious to others; diets which

make the skin glossy, the frame vigorous and the spirit joyous; others which mar the face with wrinkles, speckle the body with eruptions, and make the form fallow, lean and prematurely old.

When by successive researches, the science of diet, feeding and administration of proper reconstructives to patients, is better understood, without doubt a school of physicians will arise, discarding all drugs and treating disease by forbidding certain foods and by surfeiting with others; if indeed at the present time there is not, in the highest representatives of medicine, the nucleus of the future school of dietetics already formed.

Invalids! What thoughts does that word call into being; what pictures does the imagination construct. The whole world seems full of invalids; beings whose life is a burden to them, who would give their wealth to be relieved of their wretchedness, who would barter their knowledge and fame for the careless life of the healthy man.

We meet them in a dreary procession, here and across the continent of Europe, scattered up and down the sunny shores of the Mediterranean, steaming across the sea in pursuit of rest, camping on lonely spots to cheat their pain, all up and down the world, among the haunts of men, life taking its sad tinge from their heritage of weakness.

There are invalids who are such because they do not have enough food; there are those who are such because they have too much food; there are invalids who have made themselves such by improper diet; and there are invalids who are invalids because they will not eat proper food.

There is no doubt that improper food is often the cause of our ills and certain maladies—that much abused member of our body, the stomach, is often answerable for ill-temper, discontent, fretfulness, caprice and ennui, and yet if we listen to its admonitions, and heed its teachings, we should enjoy more peace and find more happiness in our lives.

The success of half the water cures and health resorts is based on this fact, for they associate with their strictly medical treatment a strict dietetic regimen, plain, wholesome and temperate, and which is insisted on as part of the cure, knowing that the over-eating and drinking, during the city season, must be combated with the moderation of the holiday season. It is a very rational mode of treatment, and is the only one that will restore the balance. Far better would it be, if the need for cure did not exist, but such self-denial is too much to look for, in these enervating days.

In an article published by me, in the *Journal of Baneology and Dietary*, of March, 1892, entitled "Diet, Digestion and the Voice, etc.," I had occasion to thoroughly discuss this subject, giving my several years' experience in the treatment of the diseases of vocal organs in singers, actors, clergymen, lawyers and others, observing that diet played a chief part in their successful treatment. I have also spoken in detail in this article of a diet (a modification of the true vegetarian system), called by me "modified vegetarian," one which I adopt for various reasons explained therein. I prescribe this mode of living in all diseases of the nose, throat and the ear, and in all catarrhal forms of chest diseases, either simple or complicated, with Bright's or other forms of kidney diseases, in rheumatism, gout, dyspepsia, and stomach disorders of all kinds, in nervous diseases and in all degrees of alcoholism.

My modification of the mixed vegetarian system, consists in the utility of fats as an economiser of albuminoids, and I must say that a vegetarian diet, in which animal and vegetable fats enter freely, is a very much more complete food and likely to be very much more satisfactory, than one from which all animal fats, like butter, cream, milk and kumyss are excluded. Indeed vegetarianism with liberal allowance of fats of all kinds, has in my experience given by far the most satisfactory results, in such cases as gout, rheumatism and indeed in all dyspeptic disorders.

From my experience of several years' employment of this system in my practice, I do not consider that by this means we reduce the albuminoids too much. I can commend this modified form of vegetarian system, though its adoption must not be undertaken too suddenly, and must be done under the supervision of a physician.

When prescribing such a diet, I supply the albuminoids by using kumyssgen or kumyss and lean meats of all kinds, etc. The kumyss, I allow my patients to partake of as much as they desire to drink.

We know that most professional people, whom we are called upon to treat for affections of the nose, throat, etc., are accustomed to high living. We therefore often find in this class of people, old cases of dyspepsia, as well as an atonic state of the small and large intestines resulting therefrom, and I find that such cases are readily relieved by kumyss, with a modified diet. I have had patients whose digestion had for years been accompanied by extreme uneasiness or pain, and who are obliged to confine themselves to the simplest articles of food, which only half nourish their bodies. Soon after being placed on kumyss and a proper diet, the distressing symptoms disappear, their stomach after a time, regaining the power of digesting almost all foods.

In cases of scrofula, syphilis and anæmia where the blood is impoverished or poisoned or the tissues are undergoing rapid waste, there is nothing known that gives so much satisfaction, as kumyss combined with the remedies in use for the treatment of these affections. The combination of iron and kumyss gave me excellent results.

It was found that in all such cases, kumyss produced no specific action, but was simply the most digestible food that could be employed, with the view of improving the quality of the blood, and the nutrition of the body.

In the many operations which we are called upon to perform about the mouth, throat, etc., I know of no better food, that serves to keep the body above par during the healing process, than kumyss given "ad libitum." I find kumyss of special service after the operation of intubation of the larynx. In these cases, I am in the habit, where swallowing is interfered with, of feeding by a stomach tube, and the only food that I found thus far suitable, was kumyss. I would feed the patients on it from three to four times daily, giving the quantity indicated by the age.

In two cases of cancer of the œsophagus, the nutrition of the body was extremely low when the cases came into my hands for treatment, on account of a lack of nutritious food. These cases having the cancerous growth so situated, I intubed the œsophagus and through the opening thus made, kept up the nourishment of these patients by kumyss and a gen-

erous diet. Large quantities of kumyss were administered in this way. Their life beyond doubt, was prolonged for eight months, besides relieving them from the agonies of starvation, which is the usual end in such cases. I will cite one more important case from my record book, showing the importance of kumyss as a reconstructive.

A child two years old was suffering from a syphilitic tumor at the base of the interior of the epiglottis; the tumor involved the vault of the larynx, which necessitated a dangerous operation at that age. I intubed the child and by means of the stomach pump, fed it on kumyss for three months, until the action of the remedies employed for the treatment of this tumor, resulted in diminishing its size. The child recovered without much loss of weight.

Many other similar cases thus treated with kumyss, I could cite, and I would advise you all to give this valuable food a thorough trial. I can highly recommend its use, in all branches of medicine, as well as in my special cases. For additional points connected with special application of "diet" dietetics for all voice users, I must refer to my article cited above.

In conclusion I would say, that I have substituted kumyss, made from kumyssgen (the new dry form of kumyss) in all cases where I formerly employed liquid kumyss, and find it much superior in many respects, both in regard to convenience of handling and in the results obtained. It is uniform in composition and I find most patients will take it readily, which is not the case with the liquid kumyss.

LARYNGEAL TUBERCLE AND TUBERCULIN.

Read in the Section of Laryngology and Otology, at the Forty-third annual meeting of the American Medical Association, held at Detroit, Mich., June, 1892.

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It is not the object of this paper to enter upon a general study of the treatment of laryngeal tubercle with tuberculin, or to summarize the published experience of others, but merely to give you a brief account of a few cases from my own clinic, and to make a few inferences from the same. During the past year I examined sixty-three cases of tuberculosis of the respiratory organs, and treated twenty-six of them with tuberculin. Of these twenty-six seven had disease of the larynx in addition to the lung disease, which was well-marked in each case, and in no case was there any indication of either inherited or acquired syphilis, viz.:

Case 1.—Wm. Brintenbacher, æt. 20; Londonville, Ohio. Cough began about January 1, 1891; had hæmorrhages April 15 and 16; fever and night-sweats daily; decreased in weight 20 pounds; consumption hereditary on both sides of family.

April 23, 1891, 4 P.M.—Pulse, 132; respiration, 30; temperature, 102. Cough frequent, some expectoration containing bacilli, râles and obstruction in the apex of the left lung, an ulcer on inner surface of left arytenoid cartilage, deep, and a quarter of an inch in diameter. Also a solid tubercle an eighth of an inch in diameter on the first tracheal ring.

I treated him exclusively with tuberculin from April 23 to August 15, in all 54 injections from 1-20 to 1, minim each. The solid tubercle and the râles had entirely disappeared by May 20, but the ulcer on the arytenoid did not close until about the first of August. Some thickening remained for two months later, by which time his cough and expectoration had ceased, and he had increased twenty-nine pounds in weight. Up to this date there has not been any return of the disease in his throat, but since April first his lungs show evidence of increasing tubercularization. He has not returned for treatment.

Case 2.—Mrs. Jacob Miller, æt. 23; Mansfield, Ohio. Began to cough and have fever and night sweats in December,

1889; has had an occasional small hæmorrhage; appetite and digestion good; no loss of weight, consumption hereditary on one side.

March 28, 1891, 3 P.M.—Pulse, 100; respiration, 24; temperature, 101. Râles in apices of lungs, cough frequent. Free expectoration containing bacilli, anæmic, fever and sweats daily; tuberculous ulcer covering the inner surface of left arytenoid cartilage. She received 45 injections of tuberculin between March 28, and the following July 1, without producing any change in either lungs or throat for better or worse. She died of lung disease eight months later.

Case 3.—Mrs. George McMullen, æt. 25; Mansfield, Ohio. Cough and fever began December, 1890; has had two slight hæmorrhages; has decreased 20 pounds in weight; lung disease hereditary on both sides of family.

May 13, 1891, 4 P.M.—Pulse, 92; respiration, 22; temperature, 100. Râles throughout left lung; free expectoration. Sputum contains bacilli, cough frequent; left arytenoid a little thickened, not ulcerated; appetite and digestion poor. Began injections of tuberculin May 14, 1891. By June 1, entire anterior surface of left arytenoid had ulcerated with increased thickening of the cartilage. Treatment continued to July 21, in all 32 injections. When discontinued, the arytenoid thickening had considerably diminished, the ulcer was about half the former size. Left lung unchanged. Appetite and digestion improved. The fever and sweats had ceased by the middle of June; her weight had increased 5 pounds. There was no return of fever or sweating, nor increase of the lung, or laryngeal disease until March, last, since which date there has been a gradual increase of the lung and laryngeal lesions. The treatment has not been renewed.

Case 4.—Wm. Masky, æt. 30; Mansfield, Ohio. Cough, fever and sweats began with the grip November, 1889; has lost 27 pounds in weight; lung disease hereditary on one side of family.

May 18, 1891, 5 P.M.—Pulse, 120; respiration, 24; temperature, 101. Upper lobe of each lung obstructed; murmur very deficient; no râles; frequent cough; no expectoration; mucous from throat contains bacilli; anæmic and weakened. Larynx and trachea covered with miliary tubercles. I treated him with tuberculin from May 18 to July 1, without making any improvement on either throat or lungs. He died of pulmonary hæmorrhage three months later.

Case 5.—J. D. Tipton, æt. 26; Ashland, Ohio. Cough and fever began September, 1890; had frequent profuse hæmorrhages in April and May. Consumption hereditary on both sides of family.

May 25, 1891, 3 P.M.—Pulse, 128; respiration, 32; temperature 102. Obstruction and râles throughout the right lung, and in apex of left. Cough frequent, expectoration large; sputum contained bacilli. No disease of larynx. Began tuberculin injections May 26, 1891, which were continued daily at first, and semi-weekly afterwards to Aug. 6, from one-tenth to one minim each. About July 4 an ulcer opened on the right ary-epiglottic fold, and one on the inner surface of the left arytenoid, with considerable thickening. Last examination, Sept. 7, showed no improvement in either throat or lungs. Died Jan. 1, 1892.

Case 6.—Frank Stevens, æt. 27; Carey, O. Cough and fever began spring of 1890; had several large hæmorrhages in June, 1891; lung disease not hereditary, although two brothers and sisters died of it.

Sept. 21, 1891, 3 P.M.—Pulse, 120; respiration, 24; temperature, 100. Râles and obstruction throughout right lung; superior lobe of left obstructed; miliary tuberculosis covering pharynx and larynx; free expectoration containing bacilli. Received tuberculin treatment for one month, in all 20 injections, without any improvement of throat or lungs. Died a few weeks later.

Case 7.—Mrs. A. Voeglir, æt. 28; Mansfield, Ohio. Cough, fever and night sweats began July, 1890; has lost 26 pounds in weight. No hæmorrhages; very weak and anæmic. Father and sisters died of consumption.

May 7, 1891, 4 P.M.—Pulse, 130; respiration, 30; temperature, 103. Obstruction and râles in apex of each lung, left arytenoid double as thick as the right, with deep ulcer covering anterior surface, from which pain extends to left ear; cough frequent, expectoration moderate; bacilli in sputum. Began treatment with tuberculin May 8, 1891. For the first month daily injections, beginning with one-tenth and reaching two minims each. By July 1 the obstruction and râles had disappeared from the lungs. September 5, the thickening had left the arytenoid, but the ulcer did not entirely heal until about Nov. 1, leaving some deformity of