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ON THE ABSENCE OF COW'S-MILK FROM JAPAN; ITS BENEFICIAL CONSEQUENCES.[1]

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ONE of the most striking features of that most curious of countries, Japan, is the singular scarcity of domestic animals. There you will never find the fields dotted with oxen or horses drawing the plough; for the Japanese are hardly acquainted with that time honored tool and symbol of agriculture. Even to serve under the saddle does not come natural somehow to the Japanese horse; "a grudging, ungenerous animal, trying to human patience, with three movements (not by any mans to be confounded with paces), a drag, a roll, and a scramble."[2] Horses and cows are only seen in cities, and on the roads as pack-animals; there are no pastures sweet. Silence is here really a striking magnificent feature of the *rus beatum*. The cone-shaped mystic Fusiyama rises, dimly seen, in the midst of an awful quietness. No lowing herds wind o'er the lea; the barn-yard fowl's is almost a voice *clamantis in deserto*. He reminds the farmer, but only in the morning, that, even under these stagnant circumstances, time flies. Here and there, however, a dog howls: that is all.

The animal life of the land is set apart, concentrated, and taken care of, as in a kind of common preserve, a general park or reservation, in the interior of the land; where it browses and prances and bellows and reproduces itself, contaminating as little as possible that high type of eastern humanity which is now making ready for the baptism of western civilization.

But let me say, in passing, that what the European in Japanese fields misses, I believe, more than anything else, is

> "The music of those silver bells,
> Falling at intervals upon the ear,
> With cadence sweet."

I intend here only to speak of one of the consequences of this quaint absence of animal features, of something not poetical at all, but practical in the highest degree. The cow, in Japan, is not wanted for her milk; otherwise she would lift her voice more boldly in the landscape. Milk, being an animal product, falls under the general condemnation which excludes everything that has pertained to a living body from the alimentation of man. Now, it is true this latter rule has a strange exception, for the animals of the chase are eaten. Let us not shrug our shoulders at the apparent inconsistency; the Oriental mind understands itself. Thus it happens that, as Japan may not use cow's milk, the Japanese mothers are compelled by stress of circumstance to suckle their babes themselves; and these delicate dwarfs have become the most perfect, the most successful *Almæ Matres* of the world.

Artificial lactation is altogether unknown. The children are suckled until the sixth year, and you may hear them ask for the breast in a language as correct as that of adults. But it must be said that the mother's milk is not the only food of the little Japanese. River fish enter for a large part into their diet; after the first year some other elements of general alimentation are added to their bill of fare. But the mother's milk always remains the *plat de résistance*.

Nature and society have endowed this notable mother with some great and peculiar advantages. Here menstruation returns only a year and a half after birth. Moreover, rules dating back to time out of mind insure the young mother a long time of especial attention on the part of the husband and her whole household. The existence of the concubinate is also, strange as it may appear, a considerable relief to the Japanese matrons. All that must tell favorably on the health of the children. Even the infantile minds find themselves in a wholesome, pleasant medium. Nowhere are children so constantly, so lovingly taken care of. Japan, it has been said, is the very paradise of childhood. Nowhere are the adults so well qualified to enter into the nascent ideas of the infant, to play with him; for the nature of the Japanese contains an extraordinary proportion of simplicity and childishness.

The principal food of the mothers, besides the everlasting rice, is fish, shells, sea-weeds, and other products of the sea. No wine or beer enters into the diet of a lactating woman. The great reward which Japan reaps from this meritorious care of motherhood and childhood is the absence of rachitism. All observers have referred to the fact, and to the absence of rachitic pelves, which is the consequence of it; hardly any difficult confinement, and a very small percentage of deaths in child-birth. Now, I think I am not wrong in affirming that the chief and central source of these great sanitary blessings is the absence of cow's-milk.

It is a remarkable fact that Japan, which, according to Dr. Brush,[3] ought to be exempt from tuberculosis, is very far from being so. It is probably well known to you, that, according to this observer, tuberculosis passes from the cattle into the human organism. In Japan, this disease exists mainly in the upper classes where, evidently cow's milk has nothing to do with it, and, where it is easily explained by a systematic custom of close inter-marriage, a system of, according to our ideas, incestuous inbreeding, which has endured for many centuries; this is the same process by which the disease is developed in cattle, according to Dr. Brush. It seems, therefore, that there is no necessity of transmission, and that the human organism worked upon by the same causes will show the same effects. Strange to say, the mountaineers, who have the most intimate relation with the isolated Japanese cattle, on their breeding ground, are practically free from tuberculosis. There is also an historic fact which goes much against Dr. Brush's theory; the cattle were introduced into Japan, from China, in the third century, and tuberculosis is known to have existed there in that same high-bred class from times immemorial. The aristocratic disease, tuberculosis, was certainly communicated to the common people through a very extensive concubinate; and I am equally convinced that it was the milk of the mothers that preserved the lower orders from destruction.

Thus it would appear that the absence of cow's milk, though not a blessing in the sense of Dr. Brush, has had in another way an exceedingly beneficial influence on the general health of the race.

Racial immunities, or the natural resistance of a race to certain diseases, are at least partly transmitted by the mother's milk. It is thus, as I said, that this race is free from rachitism. And there is another privilege of the same kind transmitted through the milk to the suckling. The iodized sea-foods, more especially sea-weeds and the fats and oils of fishes, which have for so many centuries formed a considerable proportion of the

[1] Read in the Section of Diseases of Children, at the forty-third annual meeting of the American Medical Association, held at Detroit, Mich., June, 1892.

[2] Miss Bird, Unbeaten Tracks in Japan.

[3] See "The Relationship Existing between Human and Bovine Tuberculosis," by E. F. Brush, M.D., Mount Vernon, N. Y. Read before the New York Academy of Medicine April 18, 1889 (*N. Y. Med. Jour.*, June 15, 1889). Also "On the Coincident Geographical Distribution of Tuberculosis and Dairy Cattle," by E. F. Brush, M.D. Read before the Medical Society of the State of New York at its eighty-fourth annual meeting (*N. Y. Med. Jour.*, March 8, 1890). Also "Consanguineous Breeding in its Relations to Scrofula and Tuberculosis," by E. F. Brush, M.D. Read before the Society of Medical Jurisprudence and State Medicine, March 10, 1890 (*N. Y. Med. Jour.*, June 28, 1890).

diet of nursing mothers, have without doubt helped to build up the racial resistance to their national inheritanee, syphilis and tuberculosis.

In the case of tuberculosis this resistance is so efficient that even the child of a tuberculous mother, fed on what might be supposed to be tuberculous milk until the sixth year, in the majority of cases remains unaffected. Now, if a tuberculous cow's milk transmits the disease to the human organism, why should not this tuberculous mother's milk transmit it? Even we do not object to the suckling done by our own tuberculous women, which indeed extends generally over but one year, yet their offspring, for the most part, are unaffected by the disease, at least in childhood; now it is more than likely that, if there were a contagion through milk, its effects would be apparent in the children. All these benefits would, of course, be cut off by the substitution of a foreign element to the natural means of transmission.

While I was in Japan, I conceived an idea quite satisfactory, at least to my own mind, of the manner in which the iodized food renders its great service to the Japanese race. It is generally supposed that the contagion of tuberculosis is communicated by the inhalation of particles of dried sputum disseminated in the air. It is my firm conviction that this is not so. I believe that these germs of disease are swallowed with the saliva, and alter the nutrition through the chyle and mesenteric glands. In an organism fed directly or indirectly by iodized substances, the poison meets and is neutralized by its own antidote. The Japanese mother, as by an instinct, never kisses her child on the lips. Indeed, the whole institution of kissing (except in the sexual act) is practically unknown in Japan. It is even formally condemned because the Japanese know that the kiss is the carrier of tuberculosis and syphilis. I have no doubt but that the caresses of the sick have added enormously to our own statistics of tuberculosis, and have caused much of the mischief which Dr. Brush would attribute to cow's milk.

I don't know whether the following has struck any other observer, or if I am the first to call attention to it. There is another, an occult and insidious danger which Japan escapes by letting cow's milk alone. If they drank it as we do, it is very probable that they would drink it as we do, *nolentes volentes*, mixed with a nobler fluid. Now, thanks to the rice plantations, the water of Japan is by no means the best of things; it is even the worst, for it is pregnant with typhoid germs, being continually polluted with human excrements and swarming with the brood of the distoma. Total abstinence from cold water, an inverted teetotalism, has been the salvation of Japan. Water is only drunk boiled with tea; the boiling kills the typhoid germs and the eggs of the distoma.

THE ETRUSCAN RITUAL BOOK.[1]

BY DANIEL G. BRINTON, M.D., LL D.

THE discovery by Professor J. Krall of the fragments of an Etruscan book, written in the time of the Ptolomies, and preserved in the swathings of an Egyptian mummy, is an epochal event in archæology and cannot fail to excite the liveliest interest in learned circles. It has just been issued by the Vienna Academy of Sciences, and in a manner entirely satisfactory to the most exacting criticism. The mummy bands on which the inscription is written are reproduced photographically with the greatest care, and the judicious text and commentary by the editor are just what are needed, and no more than are needed, to place all the material for a thorough study of the document in the hands of the reader.

The circumstances of the discovery of the mummy and the inscription have been already briefly referred to in *Science*, Sept. 23. The first who noticed the writing was Professor Brugsch, in 1868; but he did not recognize it as Etruscan; nor did Captain Burton, who published a portion of it in 1879, although that versatile writer was the author of a book on Etruscan remains. Professor Krall, in February, 1891, was the first to make this remarkable identification.

[1] Die Etruskischen Mumienbinden des Acramer National-museums. Beschrieben und herausgegeben von Prof. J. Krall. Wien, 1892. In commission bei F. Tempsky.

The original condition of the book can be restored from its fragments. It was written on a piece of linen, at least 3.50 meters long, by 35–40 centimeters wide. The writing was in columns, so that when the linen was rolled, by unrolling it moderately, one such column, about 25 centimeters wide, could be commodiously read. The writing was done with a reed, and with ink made from carbon, like that which we know as "India ink," and which was usually employed in ancient Egypt. The letters were firm, clear and regular, plainly the work of a skilled caligrapher. The alphabet is that of a high class of Etruscan literature,— quite apart from those degenerated forms which are found in northern Italy. It is probable that the original roll was longer than the fragments indicate, and therefore that they only represent a fraction of the original work.

The linen on which the book is written is of Egyptian manufacture. But as at the date of its preparation Egypt supplied much of the Mediterranean world with the products of her looms, this does not prove that it was written in Alexandria. The question must be left undecided; but there is nothing else Egyptian about the scroll. The text contains no names of Egyptian gods or personages and no sign of foreign influence. It is wholly Etruscan in language, proper names, and general character, and at most may have been an Egyptian copy of an original brought from some Etrurian city.

The text offers twelve columns of about twenty-five lines to a column, six or seven words to a line. A number of the lines are incomplete, others are lost; but enough remains to offer an excellent apparatus to study the language. There are a number of repetitions, as of set phrases, and at the beginning of several paragraphs the Etruscan numerals are found, applied always to certain words of frequent recurrence. The names of various Etruscan divinities, as Nethunsl, Tinsin, Thesan, Usil, Uni, etc., are repeated, indicating clearly that this is some kind of a religious work. Professor Krall pronounces it a ritual to set forth the character and number of offerings (*Opferritual*). From certain arrangements noticeable in the text, I think rather it belongs to the class of works on divination, for which the Etruscan haruspices were so famous.

Something may be added to show the exceptional value of this find.

There is no greater mystery in the whole of European antiquity than that which surrounds the Etruscans. Niebuhr once said that he would willingly part with a large part of his fortune to be able to identify their ethnic relations. Up to the present time, this has been impossible. Not a single theory has been offered which has proved acceptable. Some of the ancients maintained that the primitive Etruscans came from Asia Minor; Virchow has written an article tracing them over the Alps toward the north-east; Dr. Isaac Taylor wrote a book to prove they were "Turanian;" Burton, in his "Etruscan Bologna," tore Taylor's hypothesis to tatters, but did not have better success with his own; and so on with an endless chain of attempted identifications.

The uniform tradition of the Etruscans themselves was that their ancestors came by sea to the shores of Italy, and landed first on the west coast, approximately about 1200–1300 B.C. Thence they extended over central and northern Italy as a conquering race, developing a remarkably high civilization, and finally succumbing to the Romans on the south and to the Celtic and other barbarous tribes on the north. They had settlements as far as the Rhetian Alps, and I have seen in the Museum of Chur, in Switzerland, tombstones with inscriptions in the Etruscan character from that locality. It is true, however, that this is not conclusive evidence; as it is quite certain that some inscriptions in this alphabet are not in the Etruscan language. Their alphabet was adopted by the Veneti, an Illyrian people, and also by the Celts, both of whom wrote in it their own tongues, or at least employed it in their mortuary inscriptions. As the matter now stands, in spite of our possessing over five thousand Etruscan inscriptions, some of considerable length and others bilingual, I do not hesitate to say that there is not a single word whose meaning we positively know.

A true Etruscan inscription was discovered some years ago on the island of Lemnos, in the Ægean Sea, showing that this sea-