TAPYO (AN AURVEDIC MEDICINE OF ZIRO VALLEY IN ARUNACHAL PRADESH)

8

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I. ABSTRACT

The Apatani tribe of Ziro Valley in Arunachal Pradesh prepares a substitute for salt, called TAPYO from different combinations of 56 grasses, ferns, shrubs etc. Its preparation is very much similar to the alkali preparations describe in CHARAK SAMHITA and SUSHRUT SAMHITA. The author propose the hypothesis on the basis of his preliminary investigations that due to this Ayurvedic alkali 'TAPYO', the Apatani peopel are free from Goitre, and acidity trouble is very rare among them.

II. INTRODUCTION

"JIVET SHARADAH SHATAM i.e., the longivity of a hundred years", has been the enternal desire of man since time immemorial, and man working on the principle of trial and error over thousands of years developed Ayurveda to enhance his physical fitness, mental harmony, social well-being and spiritual consciousness.

The author during his stay from 1975 to 1984 in Ziro, and going from village to village and talking from heart to heart explores one of such noble adventures of the earlier man, one of the precious gems in the ancient treasure of Ayurveda, possessed by the tribes of Arunachal Pradesh.

III. BACKGROUND

Chanting "TAKU TAPYO BAI ALO", Bulyang elders enter into a host village of the Apatani valley, during Myoko festival and the whole host village welcomes the wise Bulyang members with 'O (Apong) and Tapyo. (Apong : Rice or Millet Beer)

What is Tapyo ? It is mentioned as 'APATANI BLACK SALT' in anthropological books. How is it prepared? An Anthropologist writes "As a substitute for salt, the Apatanis boil down the ashes of burnt ferns and other plants, they find in the forest and make a cake, a kind of Potash".

What is its role, is there any scientific aspect associated with it ? It is generally taken with rice/miller beverage (Apong); this is the reason why it is also known as "O Tamnanii". "It provides alkaline medium to the digestive system. It checks the alcohol from being converted into acid. Since 'acidity trouble' of stomach is very rare in this area, it may be

considered to be a natural soda". Perhaps, it is the only and only one food-habit which makes the Apatani society, different from the others. Does this item of food habit keep the whole Apatani Valley free from goitre, while the whole Himalayan foot-hills are under the epidemic goitre belt?

Let us find out the answers of these questions in detail :

IV. ANTHROPOLIOGICAL SIDE

In olden times when common salt was an important requirement for the hilly people, and getting it from the plains was a herculean task, the earlier man tried various plants from his surroundings i.e., from the lap of Mother Nature, to obtain a substitute for the salt. By trial and error method, the wise men of Ziro valley got it in the form of TAPYO.

According to one Apatani folkfore, ACHI-DOJI-MADO was the first wise woman who prepared it. As per another folk-tale, EPYO YAGU and EPYO YAGE were the first wise women, who on the advice of their brother EPYO POPI, prepared it for showing hospitality/warm welcome to Bulyang members at the time of Myoko festival celebrations. During Morung festival, Tapyo is offered to GYUT-WII to please Him.

V. METHOD OF PREPARATION

a) One, two or many or all the following grasses, plants, HUGU, TARY, PEPU, RORING (edible species-Polygronam hydropiper), PIINGII, MIMA, TABLYI, SARSE-SARKHO etc., are collected, dried and burnt.
b) The ash thus obtained, is taken into KHUGYU and proportionate water is added slowly, then it is stirred and the filtrate thus collected is know as PIILA.
c) A CHANKO place is oiled with pig's fat and it is put over the fire. Some rice water is poured into this pan and it is allowed to dry.
d) Into this dried CHANKO pan. PIILA is added and allowed to evaporate. Adding PIILA and getting it to evaporate is repeated a few times.
e) The remaining thick paste is wrapped in leaves to make it solidify. This solid substance is TAPYO.

VI. COMPARISON WITH KHAR/KSHAR

In olden days, an alkali (KSHAR in Sanskrit and KHAR is Assamiya) was regarded as a substance which was produced by KSHARAN.

'Charak-Samhita' and 'Sushruta-Samhita describes the details of processes for obtaining different types of alkalies as well as their use. According to Bharatiya Medicine System, alkalies are classified into three types :

a) mild (mridu)
b) caustic (tikshna)
c) those of different average strength (madhyama)

The alkalies were prepared from the ashes of certain plant products. For this purpose, some 25 plants are mentioned in the 'Sushruta-Samhita'. The procedure described is as follows :

"Selected pieces (Wood, leaves, roots and fruits) of the plants are piled up, a few pieces of limestone are kept on them and the whole material is burnt to ashes. 32 measures of this ash are stirred with 6 measures of water and filtered through cloth and the process is repeated 21 (twenty oen) times. The extract thus obtained is concentrated by boiling in a large iron pan. During boiling, it is constantly stirred by means of a ladle till the liquid becomes clear, pungent and soapy to the touch. At this stage, the desired quantities (8 measures), each of which burnt with limestone and conch-shells are heated strongly in an iron pan. This mass is then mixed with three quarter measures of the above mentioned liquid and evaporated to obtained a solid residue, which is then mixed with 64 measures of water and thoroughly boiled with constant stirring with a ladle till a concentrate of the required consistency results. This concentrated solution is now decanted and preserved in closed jars. This is the alkali of medium strenght 'madhyama Kshara'.

If the alkaline extract is boiled to a proper consistency without the addition of the burnt shell an alkali of mild strength (mridu Kshara) is said to be formed. On the other hand, if the alkaline extract is repeatedly boiled with the ashes of some more plants the product is said to be caustic or strong alkali 'tikshna Kshara'.

These descriptions amply illustrate the experimental technique employed and also the nature of quantitative consideration of which the experimentalists were well advanced. The method of preparation of Kshara was considered to be an art (kala) and in fact it was recognised as one of the 10 important arts of Ayurveda.

In Assam, KHAR is used to get relief from stomach-disorder. It is believed to be an appetiser. When HATH-KHAR taken with Bhat (cooked rice), it is diuretic. During cough-cold, KHAR is applied on forehead. The KHAR prepared from KHER-grass is used for washing clothes, particularly ENDI-CHADAR.

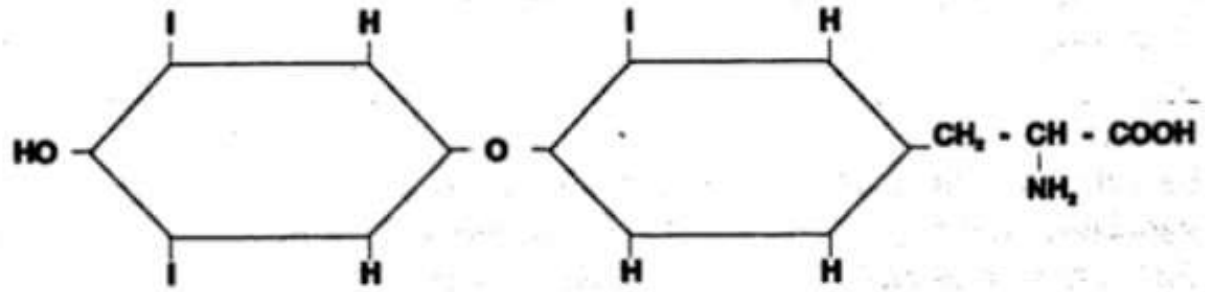
VII. UTILITY OF TAPYO

The Apatanis believe that one can consume more APONG if it is accompained with a little TAPYO. During a feverish state or after fever, if a little TAPYO is taken with food, the taste for food is developed. When the Bulyang committee is in session, one has to speak hours together, or during ritual/Puja, a nibu (priest) has to chant for hours together; a little of the mixture of TAPYO, RIKOH power common salt and chilli powder helps the speaker to continue.

The PIILA i.e. the preliminary liquid state of TAPYO is like a 'CHATNI' (paste), it is very much liked and preferred by the Apatanis as one of the ingredients of their meal. The cooking o hard meat (portions) becomes easy when PIILA is added; it not only makes the meat tasty but more digestive too.

VIII. TAPYO AND GOITRE

Endemic goitre is the swelling of the thyroid gland in the neck due to deficiency of iodine in the environment, and hence in the human system. In iodine deficiency, the thyroxine level in the blood is lower than normal, which stimulates the thyroid gland to greater action due to which it enlarges.



Thyroxine is essential for the normal growth and development of the young ones of all species. With an undersecretion, growth may be retarded and if the reduction is severe and prolonged, may result in failure to mature both physically and mentally.

Goitre 'Bharat's silent epidemic', is a source of misery and horror in the whole Himalayan belt. But, it is an astonishing fact that goitre is very rare among the Apatanis, the inhabitants of Ziro valley. To settle this point, necessary experiments for iodine content in drinking water and soil of Ziro area and the special food habits including 'TAPYO' of the apatanis, may be undertaken. The author finds preliminary positive test for iodine radical in some of the plants like HUGU, PIINGI etc., used in the preparation of TAPYO.

At the moment, the scientific treatment is carried out, at Govt. level, by giving iodised salt to the people to prevent goitre (iodine deficiency disorder). It has been observed that it is bringing good results and the number of goitre patients is comparatively decreasing.

Cabbage, cauliflower, radish, maize, millet, cassava etc. retard the formation of thyroxine in thyroid glands because they contain goitrogenic substances (like Thiocyanantes, Isothiocyanates, Goitrin, Cynogen etc.). The consumption of large quantities (only the large quantities) of these foods containing 'Goitrogenic' substances may lead to the development of goitre by making the iodine present in the food, not available to the body.

All food derives its iodine content from the soil in which it grows. If the soil is poor in iodine, all the food grown in that area will be low in iodine. It is evident from the following table :

Food	Goitrous region (parts per billion)	Non-goitrous region (parts per billion)
Wheat	1-6	4-9
Dals	10	23-175
Carrot	2	170
Patato	85	226

To prevent iodine - difficiency in the environment, top-soil erosion and flooding should be checked and for it a scientific literacy drive should be started in the areas which are geographically prone to flooding, and couple it with informing the population which is not environmentally aware, which, because of poverty, is driven to degrade the land for fuel, fodder and crops.... with no thought for the future.

The National Research Council has recommended an intake of 100 to 150 mg. iodine daily for the adult. The need for the adolescent and pregnant women may be greater. The iodine-content of some foods is given in the following table : 9

Food	No. of samples	Iodine (median, mg/wt Kg)
Sea-foods	7	540
Vegetables	18	280
Meat products	12	175
Eggs	11	145
Dairy products	18	139
Bread & Cereals	18	105
Fruits	18	18

It is the need of the hour that the scientific investigation of TAPYO and the edible plants grown in dump/marshy places as well as the plant food products containing goitrogenic substances, should be carried out. It will be one more step towards ensuring our children to grow up with healthy minds in their healthy environment utilising our own resources.

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