Gathering Esculent Wild Plants in Dhofar: Prehistoric Practice Continued

Ali Tigani ElMahi

Abstract: *This paper looks into the gathering of esculent wild plants by the traditional pastoralists in Dhofar, Oman. In this region, the camel and goat pastoralists gather wild plants for their subsistence. Thus, their adaptation to the ecological setting and knowledge of the wild plants they gather present a reasonable analogy of the prehistoric groups who practiced gathering of wild plants in this ecoregion. The knowledge and practice of the Dhofari pastoralists can possibly facilitate a reasonable analogue that permits one to draw an analogy and grasp the nature of gathering wild plants in prehistoric times. Therefore, gathering wild plants remains to be useful as a subsistence activity throughout prehistoric times and to the present.*

Keywords: *Wild Plants, Dhofar, Oman, Prehistory.*

Introduction

During the Stone Age, prehistoric groups were hunters and gatherers. Their subsistence economy was based on hunting animals and gathering wild plants. Archaeological investigations have detected a limited knowledge about the gathering activities carried out by prehistoric groups during the Stone Age. This can be attributed to the fact that plants are usually consumed completely. As for the seeds of the plants, they stand a slim chance to survive the weathering various factors. Therefore, our knowledge about the wild plants gathered by the prehistoric groups is limited. Again, the seasonality of the wild plants and how varying in occurrence according to the season is completely unknown.

On the other hand, gathering wild plants for food might seem simple and undemanding task. Indeed, it can be carried out by men, women or children. Nonetheless, a successful gathering of wild plants requires knowledge and experience about the plants, their location and seasonality. Simply, each wild plant species flourishes at a particular season and location. Again, it is crucial to possess the right knowledge about suitability for food or not. Plants can have the qualities or effects of a poison and some are not delectable.

Therefore, shedding light on the activity of gathering wild plants by prehistoric groups necessitates examining traditional societies, which practice gathering activity. To that extent, ethnoarchaeological studies came to aid archaeological investigations and queries by furnishing parallels of rational analogies. Significant analogous parallels allowed the comprehension of not only material cultural retrieved from archaeological contexts, but also complex issues related to human activities and strategies. Certainly, ethno-archaeological studies have advanced archaeological research and attained reasonable interpretations of prehistory. It proved that some keys of the past can possible be found in the present. Renfrew and Bahn (1996: 40; 168) affirms that in the last few decades New Archaeology has made noted stress on explanation and

ISSN: 1319-8947 (pp. 7-16)

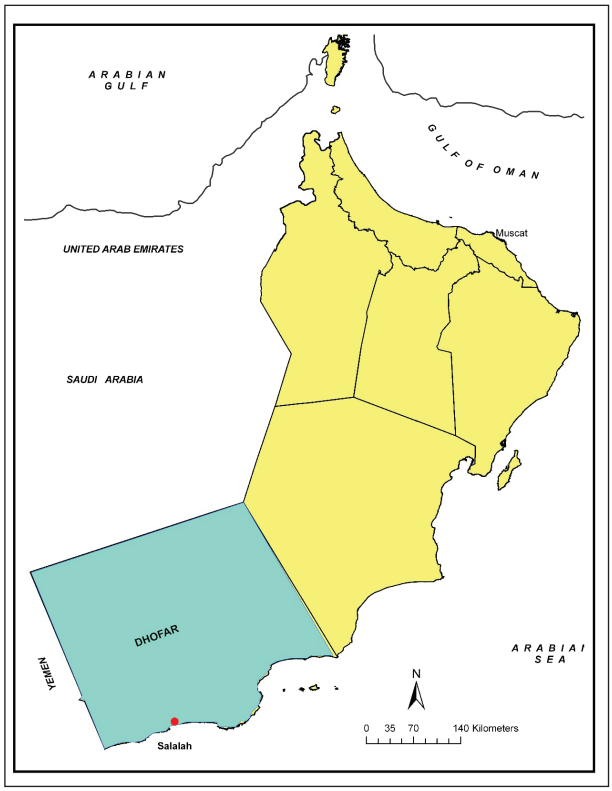

Fig. 1: Dhofar, Sultanate of Oman

that ethnoarchaeological has provided many insights pertinent to the more remote past.

This paper is an attempt to understand how prehistoric pastoralists gathered wild esculent wild plants and its part in their subsistence strategy. The paper looks into the practices of gathering wild plant by the traditional camel and goat herders of Dhofar in the southern region of the Sultanate of Oman (Fig. 1). These two nomadic pastoral groups are spread in the arid and variable environmental conditions of Dhofar. However, it would be useful to have a look at Dhofar ecoregion, the history of nomadic pastoralists, and the pastoralists and their practices before discussing their ways and the wild plants they gather.

Dhofar ecoregion

Dhofar is a distinguished ecoregion not only in the southern parts of Oman but also Arabia (Fig. 1). Yearly, the monsoon winds of the Indian Ocean and South Asia, blow in June to September. This seasonal wind come across mountains Jabal Samham in the east (1678 meters), Jabal al Qamar in the west (1400 meters) and Jabal al Gara in the center (1000 meters). This creates low clouds activating dazzle fog and rains of an average annual 200-500 mm in the mountains and 110 mm in the coastal plains with humidity ranges between 80% - 100% and temperature 32C.

The climatic conditions of Dhofar provided a distinguished ecological setting of lush flora, copious vegetation and woods. In this ecoregion, Jabal Al Gara is characterized by certain ecological zones which have been described by Miller and Morris 1988; Ghazanfar 1992; and ElMahi 2001:134. The characteristics of these zones are outlined in the following table (cf. Miller and Morris 1988 & ElMahi 2011):

Zone	Name of the zone	Characteristic plants species
1	The Coastal line	Low sub-shrub and grass cover
2	The Coastal plains	Minimal shrubs, sparse forbs and grass cover
3	The escarpment	Woodland.
4	Al Khatum	Open grassland, scattered trees and steep wooded wadis
5	Al Qatan	Short annual grass and dwarf shrubs.
6	Al Nejad	Desert and short annual grass- low shrub land.

Moreover, in the following figure (Fig. 1), the ecological zones in Dhofar are illustrated by Miller and Morris (1988) in Fig. A. and ElMahi (2001) in Fig. B.

The history of the nomadic pastoralists

In Dhofar, the early presence of man has been attested by the archaeological evidence to the Lower Palaeolithic of the Stone Age (cf. Zarins 2001). The southwestern monsoonal winds have extended between 9000 BP to 329.000 BP (cf. Clemens et al. 1991:723). Such climatic and environmental conditions are assumed

to be coupled and influenced the evolution of Stone Age technology (cf. Zarins 2001: 26). Furthermore, evidence of the Neolithic has been reported and three periods have been inferred to be the Neolithic chronology in Eastern Arabia, Oman and Rubal-Khali (cf. Zarins 2001:415). These three periods are believed to date as follows:

1) Period I: 6500-5000 BC.
2) Period II: 5000-3800 BC.
3) Period III: 2300 BC.

On the other hand, it has been assumed that the summer monsoon began at one time to the rear of ca. 10,000 BC. Hence, must have participated effectively in the development of the Neolithic tradition in this region (cf. Zarins 2001:34). Consequently, structural remains are discovered to reveal the Neolithic period in Dhofar. These structures are units of circular houses are found in Hailat Araqa site, Dauqa site, Ayun site, and Wadi Dhahabun site. Again, these and other Neolithic sites and graves yielded shells, bones, stone tools and grave goods. In addition, Andhur, Hanun, Matafah and Mirbat contain Neolithic quarry sites (cf. Zarins 2001:35- 7).

As mentioned previously, the three Neolithic stages in Dhofar are dated to be between 9280 + 210 BP and 4910 + 70 BP (cf. Zarins 2001: 417-418). At present, archaeological efforts and investigations in Dhofar have not identified any nomadic pastoralists sites. Nonetheless, rock drawings in caves and rock shelters in Dhofar's mountains contain scenes of camels and goats (cf. al Shahri 1994: Figures: 55, 89, 91, 92, 94, 96, 97, 98, 140, 142, 162, 174, 178, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 210, 213, 231). These spheres of activities deliberately indicate pastoralism accomplishments and domestic animals. It is a prove of pastoralists and their domestic animals.

Pastoralists do not leave behind much material evidence to formulated a site. They neither build houses nor stay in one place long. This argument stands on realistic observations but these observations have not been tested archaeologically on the ground. Therefore, the absence of archaeological sites of camel pastoralists has been generally accepted by archaeologists since these groups are nomadic. In fact, the Dhofari camel pastoralists are known to practice seasonal transhumant seasonal movements in addition to cyclic movements. This undisputed fact is self-explanatory for the absence of archaeological sites formed by their prehistoric ancestors.

The pastoral groups in Dhofar

Fig. 2: Camels and goats in Dhofar

In this environment, the camel and the goat pastoralists have transhumance seasonal movements driven by the seasonality and availability of pasture (Fig. 2). Moreover, within each location they move their animals for pasture in cyclic movements. In fact, it is a nomadic transhumant movement from one ecosystem to another. However, there is an0ther factor that dictates and necessitates their movements. It is three hematophagous flies in Dhofar namely the "black fly," *Lyperosia minuta, Forcipomyia lasiohelea* and *Musca crassirostris* (cf. ElMahi 2010 and 2011). These factors compel the pastoralists to move with their animals according to the seasons and these severe biting midges, which feed via hematophagy.

The Dhofari pastoralists are dependent on their animals and the subsistence economy their have developed through their experience and knowledge. In each location and ecosystem of Dhofar, these pastoralists produce their own nutriment, which is a subsistence economy that is carried on at the local community level, primarily for local consumption (cf. Bodley 1997: 33). Although, their animals are the basic capital in their economy, they are gathering wild plants go support and complement their economy and uphold their survival. In reality, wild plants are to keep and maintain in unaltered condition of their sustenance.

Wild plants in Dhofar

ElMahi (2011 and 2013) reported pastoral groups in Dhofar do gather esculent wild plants and it is well exhibited in their diet. The wild plants are in fact are an addition in their diet. In the following table, ElMahi (2011: Table 5) has documented a sample of the required information about the wild plants gathered by the nomadic pastoralist in Dhofar.

Table 5 after ElMahi (2011: Table 5)

	Plant	Edible parts	Gathering season	Location
1	*Amaranthus graecizans*	Leafy shoots & seeds	After monsoon rains	Rangeland
2	*Lannea triphylla*	Fruits	End of summer	Watered valleys
3	*Rhus somalensis*	Tuber	Mid-monsoon	Al-Qatan
4	*Arisaema flavum*	Tuber	Mid-monsoon to winter	Escarpment
5	*Remusatia vivipara*	Tuber	Mid-monsoon to winter	Escarpment
6	*Pentatropis nivalis*	Pod	Monsoon rains	All of Dhofar
7	*Sarcostemma viminale*	Flowers, fruits, stems, roots & shoots	After monsoon rains	Dry north plateau Al-Qatan
8	*Rhytidocaulon fulleri*	Flowers, fruits and stems?	End of monsoon	Outside the monsoon zone
9	*Ceropegia bulbosa*	Flowers, fruits, leaves, stems & tubers	Early monsoon rains	Khatum & Qatan
10	*Cibirhiza dhofarensis*	Tubers, leaves, flowers & fruits	Mid-monsoon to winter	All of Dhofar
11	*Raphionacme arabica*	Tubers	End of summer	Escarpment
12	*Cordia ovalis*	Fruits	Monsoon rains	Escarpment & Al-Qatan
13	*Cordia perottettii* Fig. 3	Fruits	Early summer	Springs in the foothills
14	*Commiphora habessinica*	Fruits & roots	Monsoon rains	Mountain and coastal plains
15	*Capparis cartilaginea*	Fruits	Summer	Escarpment
16	*Euclea schimperi*	Fruits	Winter	Al-Qatan

17	*Euphorbiu balsamifera*	Leaves, buds and fruits	Summer	Al-Qatan & Nejad
18	*Hydnora Africana*	Shoots, flowers & underground fruits	Monsoon rains	Nejad
19	*Gladiolus ukambanensis* Fig. 4	Corn	Mid-monsoon	Escarpment & Al Khatum
20	*Delomix elata*	Seeds	Early winter	Escarpment
21	*Tamarindus indica*	Fruits, leaves and seeds	May	Escarpment (seaward facing slopes) & south draining water courses
22	*Ficus sycomorus*	Fruits	Dry season between April and June	Escarpment woodlands, wadi sides at lower altitudes, short grass plateaus and on the wadi sides in the foothills (especially around springs)
23	*Ficus vasta*	Fruits	Late September	Wadis of the escarpment and the Katum and Qatan zones or the tall and short grass zones
24	*Ziziphus leucodermis*	Fruits	Dry season: April- June	Dry plains and wadis such as Salalah plain south the mountains range, the north-draining wadis and the north facing cliffs
25	*Ziziphus spina-christi* Fig. 5	Fruits	September- November in dry areas and April- May in wet areas	Foothills, the wet and dry plateaus
26	*Cyphostemma ternatum*	Leaves	Monsoon	Rocky slopes and cliffs

Discussion

In Dhofar, the archaeology of pastoralists is wanting and lacks the requisite qualities or resources to meet investigations. Therefore, presently archaeologists predominately acknowledge that ethnoarchaeology is a great aid in archaeological investigations. Mostly, it helps grasping the meaning and the background of the unearthed material and prehistory. Again, ethnoarchaeological studies proved to be a meaningful way of conceiving the archaeological evidence in order to understand prehistoric groups. This is a constructive way in perceiving the conceivable ways and methods of prehistoric groups.

In this context, ElMahi (2013:21): justified the need for ethnoarchaeology by stating the following:

"Simply, it is beneficial because the archaeologists'

knowledge and empirical experience are completely different

from that of the prehistoric people. In fact, archaeologists

frequently find themselves ignorant of the ways and methods

of traditional societies, let alone prehistoric ones. Therefore,

the ethnoarchaeological approach is necessary."

Nonetheless, the fact remains that ethnoarchaeology studies provide analogies, which are parallels and not evidences. Undeniably, ethnoarchaeology provides a likeness that permits one to draw an analogy.

ElMahi (20113) studied these pastoralists through informal interviews with Dhofari elderly pastoralists. Moreover, surveyed their various camp sites and excavated some test pits in these camps. This effort uncovered no cultural remains or any material that can indicate the occupation of the sites. The elderly pastoralists justified this reality by stressing that they owned very little to leave anything behind (cf. ElMahi *ibid.*).

Clearly, gathering esculent wild plants is an earnest and conscientious activity intended to accomplish the pastoralists' subsistence security. Moreover, it requires experience and a knowledge concerned with the actual how and use of the various plant species. Such a knowledge must be guided by practical experience and observation. Therefore, it is familiarity and awareness of the esculents and the useful plants for human and animal consumption. This activity necessitates a practical know-how of the quality and uses of wild plants. In addition, gathering wild plants must be guided by a sensible knowledge and pragmatic experience about the natural landscape, its ecological setting and the seasonality of the flora.

Being omnivorous, mankind began foraging plants as a portion of his nourishment since immemorial times. This activity must have started by the ancestors of *homo sapiens* in antiquated times. Nonetheless, archaeological evidence marks it in the Stone Age and continue up to the present day. It is a perpetuation of a subsistence activity that man practiced through time to maintain his survival. Therefore, wild plants represented a crucial component in the diet of the hunters and gatherers all over the world. It was a basic diet and more supplier resource than hunting wild animal. Indeed, wild plants were a more a reliable source than wild animals for prehistoric hunters. It is not certain that hunting can be successful, due to the fact that acquiring a wild animal is risky and the preys are either they flee, or fly or swim and hide. Moreover, gathering wild plants requires no tools or division of labour. It is an activity, which can be carried by men and women of all ages.

ElMahi (2011 and 2013) specified that until recent times hunting and gathering was practiced by the Dhofari pastoralists along with the pasturing their animals. For them, hunting was an occasional activity and neither planned nor calculated. It is whenever an animal cross over their daily movement with the animals.

Fig. 3: An esculent wild plant Cordia perrottettii

Fig. 4: An esculent wild plant Gladiolus ukambanensis

Fig. 5: An esculent wild plant Ziziphus spina-christi

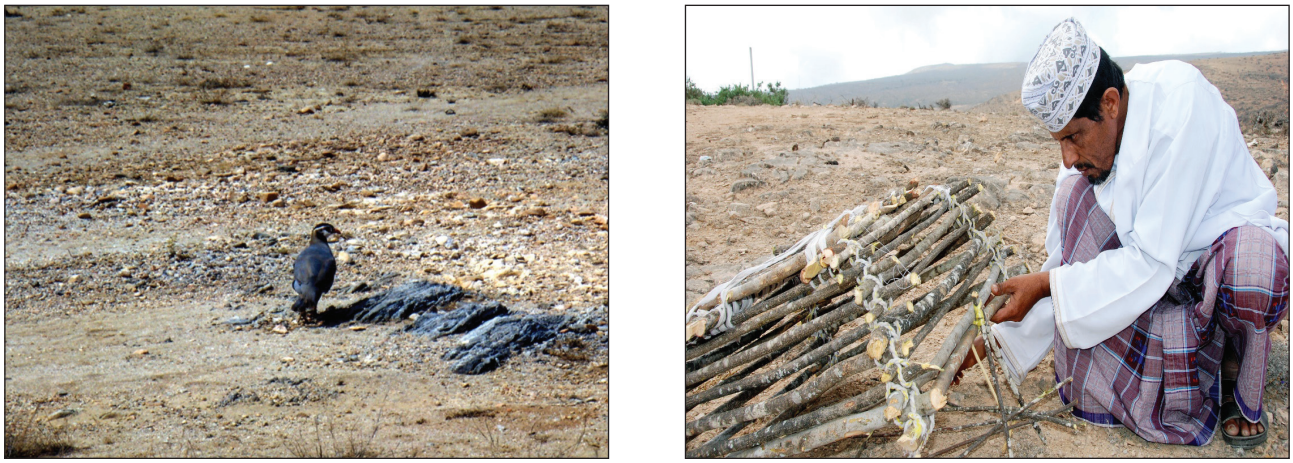

Fig. 6: The Arabian partridge Alectoris melanocephala and Traditional hunting methods of the bird in Dhofar

Again, traps were set for birds such as the Arabian partridge *Alectoris melanocephala* (Fig. 6). Consequently, hunting and gathering are not the major practice preformed on daily basis or constitute a main subsistence resource. Indeed, it is a continuous but occasional activity of a given cultural system in a given environment over the long run.

These herders gather esculent wild plants around the year. Their continues movements in the various ecological zones of Dhofar. In addition, the seasons facilitate a whole year gathering activity that provide for their sustenance. Moreover, the geographical distribution of the various esculent plants and their seasons make the gathering activity a yearly continuous endeavor. Appropriate to the situation, there are different plants in every season and location that can possibly be gathered. It should be noticed that the edible plants are dispersed over the six ecological zones (Fig. 7). Each of these ecological zones has its own characteristics that can possibly serve the needs and strategies adopted by the different Dhofari nomadic pastoralists and the ecological requirements of their principal animals that form the herds. The gathering activity takes place while they are in their transhumance movements or daily drives for pasture supplement.

In reality, gathering wild plants proved to be a required nutritional contribution to the herders in Dhofar. It is unequivocal that gathering wild plants adds effectively to the pastoralist's sustenance. Wild plants are a sustenance resource that provides the pastoralists an occasional diet, which continues maintenance of their diet. This foraging activity is daily endeavor and an adaptation to the seasons' provision and the natural landscape.

The Dhofari traditional pastoralists were not completely dependent on hunting and gathering. Nonetheless, gathering wild plants supported their pastoral economy. ElMahi (2011) underlines that wild esculents and milk yield are linked. ElMahi (*ibid*.) reports that when Dhofari pastoralists are having milk shortage, the wild esculent plants as an occasional diet supports their basic subsistence strategies. In other words, this occasional food resource can be a crucial backup and standby food resource periods of stress and food shorts. It is known that animals for pastoralists are their security and hindrance. Hence, they are known to take security measures against all types of uncertainty to avoid been vulnerable.

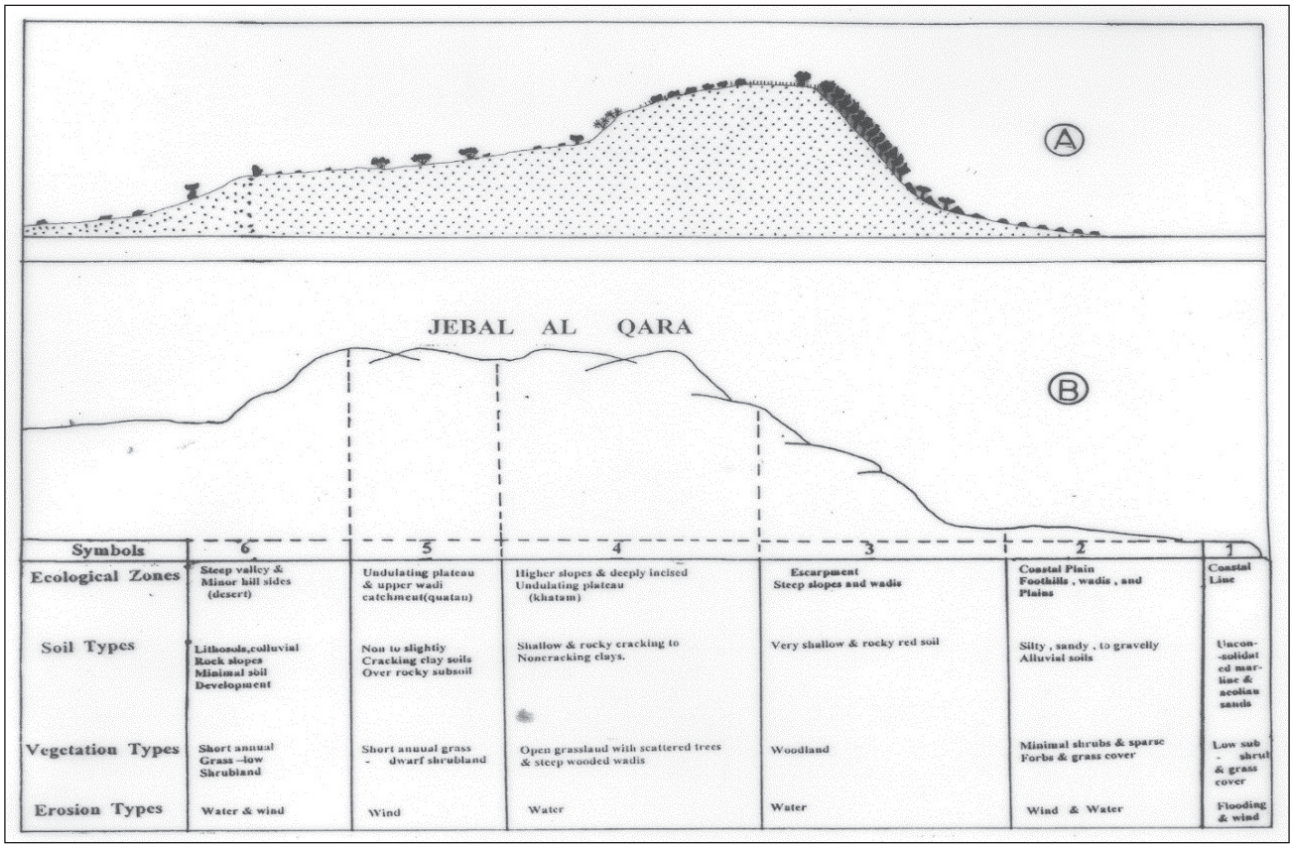

Fig. 7 (A &B): The six ecological zones in Dhofar. After Miller and Morris 1988: Fig. A. After ElMahi 2001: Fig. B.

Dhofari elderly informants confirm and stress that gathering wild plants is beneficial in periods of food shortages. Periods of food scarcities are usually connected with seasons such as summer before there are good supplies of milk (cf. ElMahi 2011 and 2013). For these pastoralists gathering wild plants was a necessary reinforcement in periods of stress.

Gathering of wild plants is basically an occasional diet undertaken as a daily activity and intensified during periods of milk shortage (cf. ElMahi *ibid.*). The Dhofari pastoralists stress that their diet is purely pastoral and that milk is the base of their nutriment and economy. Without a doubt, wild plants are not their staple diet. It composes an occasional diet that backs up, maintains and provides the staple and seasonal diets. Equally, this foraging activity provides complementary sustenance in periods of abundance. At the same time, it abides and stabilizes their diets and through the variable seasons.

Therefore, it is quite possible that the wild plants and its input in the diet of the Dhofari traditional pastoralists represent a reasonable analogy of the practices of the prehistoric pastoralists in Dhofar. Equally, the esculent wild plants and their collection must had similarly being practiced by the prehistoric hunter/gathers in Dhofar.

It is a convenient perception that can illuminate several aspects of the archaeology of prehistoric pastoral nomadic groups in Oman. It is also a new understanding of the perpetuity of hunting\gathering in the realm of pastoral economy and food production. Indeed, gathering of wild plants continues from the Stone Age to the present day. It is an indefinite long-time

subsistence activity. Therefore, the formation of a concept that recognizes traditional subsistence strategies in order to apprehend the prehistoric strategies and practices seems to be logical and convincing.

Finally, the activity of gathering esculent wild plants by traditional pastoralists in Dhofar signifies that this is an indigenous knowledge, which has its roots in prehistoric times. Even though, this indigenous knowledge is currently a fresh recollection of generations of men and women among the nomadic pastoralists in Dhofar. All the same, one can say with confidence that this cultural heritage is fading away. In principle, it is the elderly men and women who are the custodian of this ancient empirical knowledge, which have evolved through remarkable human industry and experience in the passage of time.

Prof. Ali Tigani ElMahi: Khartoum, Sudan. tiganielmahi@hotmail.com.

ملخّص: هذا البحث ينظر في نشاط جمع النباتات البرية الذي تقوم به مجموعات الرعاة التقليدية للغذاء في إقليم ظفار بجنوبي سلطنة عمان. ومن هنا، يكون تأقلمهم للنظام البيئي، ومعرفتهم بالنباتات البرية التي يقومون بجمعها تشبيه وتماثل لممارسات مجموعات رعوية في هذا الإقليم وفي فترة ما قبل التاريخ. فمعرفة وتجربة المجموعات الرعوية التقليدية يمكن أن تكون قياسا لتماثل وتشابه معقول، لعملية ونشاط جمع النباتات البرية في فترات ما قبل التاريخ. وعليه تبقي عملية جمع النباتات البرية نشاط غذائي عبر ما قبل التاريخ والحاضر.

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