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Knowledge of weights and measurements in ancient times: A Balochi and Brahui perspective

Language and Literature

Mohammad Yousuf [1] & Dr. Abdul Razzaq Sabir[2]

Abstract

Weights and measures are considered as a basic requirement of everyday life, human industry, trade and commerce, tax collection, to measure labor of shepherds, farmers, artisan and measuring distances, areas, depth, volume and time. The early men needed an accurate and standard system of measurement to cope with these problems nature provided him some rough averages such as measuring length, man used his body parts as elementary methods, like thumb (Anghusht), Foot (pad), pace (gaam), fore arm or cubit (harish, hath) similarly for weighing nature intervened to help him, grains, date stones (gaddag), a pinch (chikk), a handful (lapp), a double handful (chank) were the different tools to estimate with. For everyday transactions goat skins, baskets, woolen sacks were used as volume measurements. For time measurement the movement and position of sun, moon, stars, different seasons, rainfall and winds helped him a simple estimate of time.

Key Words: Brahui, Balochi, Measurements.

Miscellaneous Measures

Bandh/Kaas; wool shear from each sheep is made into a separate bundle is called bandh/Kaas (about 1 ½ to 2 seers) (CH,1986:120)

Chank/Buk: A double handful (JL,1986:153)

Chariki: .75 seers (JL,1986:153)

Chothra: (1 ¼ seers) Dry measure equal to one fourth of a Kaasa/Sark (Bray,1978:88)

Churo: The content which can be held with four fingers (JL,1986:153)

Gwaalag/Gwaala: Grain bag made of goats hair. (Bray,1978:122)

[1] PhD Scholar, Balochistan Study Centre, University of Balochistan, Quetta.
[2] Vice Chancellor University of Turbat.

Kaasag/Sark: Wooden measure of grain (about 5 seers)

Kachh: A larger sack (woolen) such as is carried by a bullock. (JL,1986:153)

Khafo/Lapp/Lakot: A handful (JL,1986:153)

Malav: Large sack. (Bray,1978:199)

Musht/Mutt: A fistful (JL,1986:153)

Pakk: As much as can be held in the palm. (Bray,1978:90)

Sarmardh: Measuring the depth of well's dug. Man's height or as high as a man. The wells were measured by Sarmardh.

Siser: 1 ½ chothra (about 1.75 seers). (Bray,1978:265)

Baar/baarrem: A camel, bullock or donkey load (Bray,1978:65)

Measures of Grain

In Balochistan, grain was measured in different methods the most common was Kaasa/Kaasag/Sark.

***Kaasa/Kaasag/Sark* (about 5 seers):**

Grain was measured with wooden measure Kasa, Kaasag, Sark throughout Baloch areas. The different measures in ordinary use are shown below:

Jalawan

2 charikis	=	1 chothra
4 caharikis	=	1 man, yakman, or yagman.
100 man	=	1 Gwala
2 man	=	1 kasa
80 kasa	=	1 kharwar.(JL ,1986 : 152)

Sarawan:

2 chothra	=	1 yakman

2 yakman = 1 kasa or sark.

50 kasas = 1 Gwala

80 kasas = 1 kharwar. (SR,1986:123)

Noshki, Chagai

6 lap (a handful) = 1 kuroi

2 kuroi = 1 manri

2 manri = 1 kasa (CH,1986:120)

Kachhi, Bolan

2 Pinrkis = 1 maanga

2 maanga = 1 topa

4 topas = 1 kasa

60 kasas = 1 kharwar (KC,1986:115)(BL,1986:56)

Makran

2 rub = 1 nim kiaas

2 nim kiaas = 1 kiaas

12 kiaas = 1 nim man

2 nim man = 1 man (12 seers) (MK,198:213)

Lasbela

2 paati = 1 chothro = 10 5/8 chittaks

2 chothro = 1 toyo

4 toyo = manrki (5 5/10 seers)

2 manrki = 1 manr

4 manr = 1 kaaso = 1 1/10 maunds

16 kaaso = 1 dungi (LS,1986:105)

Kohlu

2 2/5 chuthai	=	1 nim pinki	
2 pinki	=	1 maango	
2 maango	=	1 topa	
2 topa	=	1 pai	
2 pai	=	1 kaasagh	
10 kaasagh	=	1 thang	
2 thang	=	1 khai or gawaane	
2 thai or gawaane	=	1 kharwar	(SB,1986:128)

Sibi

2 paropi	=	1 maanga	
2 maanga	=	1 pinki	
4 pinki	=	1 topa	
4 topa	=	1 kaasa	
30 kaasa	=	1 bori	
2 bori	=	2 kharwar	(SB,1986:129)

Shaikhaana = Contains 16 munds of grain (LS,1986:106)

(a lasbela maund contains 5 2/5 seers) (LS,1986:105)

Linear Measurements

Harish/hath/dast(cubit): Unit of linear measure used by many ancient and medieval people, it may have originated in Egypt about 3000 BC. (Encyclopedia Britannica). People of ancient times in Balochistan used to employ harish (cubit) generally used for measuring cloth. Harish is the measurement of fore arm.

In every village there was a man whose fore arm was considered as a standard Harish (cubit) and he was referred to in all cases of dispute (SB,1986:130)

Harish is called Dast in Makran and Hath in Kachhi (MK,1986:214) (KCH,1986:117).

Waal; The distance from the tip of nose to the end of outstretched thumb.

Chaar-yak: Four equal units of Harish, Dasth or Hathh (Mk ,1986: 214).

Gwaanz: It is an indefinite measure, being the distance between the tips of the middle fingers when both arms are extended to their full length (about 79 inches) (CH,1986:121) (Bray:1978;122)(MK:1986;215).

Gidisp/Githimz(span):The distance between the thumb and little finger when extended in their full length (Bray,1978:115).

Nahun/Hore(Finger): Linear measurement of approximately an inch.

Saadh: one saad literally a rope is equal to 24 Gwaanz (Gwaanz is about 79 inches).

Liquid measurements

Chothra and Kaasag/Sark: Ghe was measured with the Chothra which held about 1 ¼ seers and by Kaasa/ Sark (about 5 to 5 ¼ seers). (SR,1986:125).

Superficial Measures

Tir: The largest unit in irrigated land is tir. Tir is represented a little more than 30 acres for spring harvest and more than 24 acres for the autumn harvest (BL,1986:57).

Varaanra : Cultivated plot containing as much land as is sown by 4 toyo or about 5 seers of jwaar or mung seeds. It is generally 100 squair paces (LS,1986:107).

Jora, Jut, Juft: Represent the land which can be ploughed for a particular crop by a pair of oxen in a day (LS,1986:107).

Beel, Junj, Khit (Angusht or musht in Gandaava): Half shabana representing on the measuring board of 12 hours flow of water in Baagnaari Kachhi (KCH,1986:117).

Gaam (Pace): Distance on the ground were generally measured by gaam (Pace).

Distances

Mizil: Camel travel of a day or 12 Hours. (JL,1986:154)

Swaar-e-roch-e-raah : Horseman's day march 08 to 12 hours (MK,1986:215)

Gwaank/ Tawaar: As far as man's shout can be heard. Gwaank or Tawaar was applied for long distances (KH,1986:109) (JL,1986:154).

Toofak na Tawaar: As far as a report of a gun can be heard .(JL,1986:154).

Hulli na maidan: Signifies a horse gallop and may be taken roughly to be about a mile (JL,1986:154).

Koh: The Koh is roughly equal to the distance of two English miles (LS,1986:107).

Fodder and Fuel

Baar/Baarrem: Fodder and fire wood used to be sold by the camel, donkey or bullock load. (Baar/Baarrem).(Bray,1978:65)

Thrangar: Busa is kept in thrangar (netful). (JL,1986:153)

Badd/Bhari: The load which a man carries on his back. (KH,1986:108)

Kore (heap,satti): In larger amount busa was sold or distributed by Kore (heap). (BL,1986:57)

Chambav/Mutt: Fodder was also distributed by chambav/mutt (a handful)(Bray,1978:213)

Bhankur, Khumb, Bagal, Baghal: A quantity that can be carried in both arms.(JL,1986:153)(LS,1986:106)

Kuchh: The quantity that can be carried an arm. (LS,1986:106)

Chilli: Double bundle across a beast's back. (Bray,1978:87)

Ghunj: A large sack for carrying grass of un-threshed grain. (**Bray**,1978:185)

Graam: A man's load of any grain except rice with the stalks in ear is called gram.(MK,1986:214)

Shaalpaak: A man's load of rice with stalks is called Shaalpaak. (MK,1986:214)

Dhung: A couple of jwaar ears. (KCH,1986:116)

Aanda: One side of the load of a pack animal. (Bray,1978 : 53)

Kurdha/Gaveer: Green barley, wheat and maize stalks were sold or distributed by plot. (Kurda or Gaveer) (JL,1986 : 153) (QP,1986: 165)

Mora: Bundle of dry lusern were sold by numbers. (QP,1986 : 165)

Puli/Bahu/lore: A bundle of sheaves. (JL,1986 : 153)

Jowaal/Baar: A bullock load of grass. (KCH,1986 : 116)

Takhta: Set of kurdhas. (plots).

Measurement of Time

Damaan/dam: A short moment .(Bray,1978:93)

Jatt: A short while. (Bray,1978 : 148)

Katra/Chutt: A time that a drop of water drops.

Sahat: About an hour.

Day and nights are divided in the following parts:

Bolan:

Roch tikk	=	Dawn
Chaasht	=	About 9:am
Goel	=	time of morning meal
Nemroch	=	Midday
Saalar	=	About 1:pm
Awal or Burz Pishim	=	About 2:pm
Pishim	=	About 3:pm
Jahl pishim	=	4:pm winter, 4:pm summer
Deegar	=	5:pm winter, 6:pm summer
Bega	=	Evening
Rojak, Rokapth	=	Sunset
Shaam	=	An hour after sunset
Khuftan	=	About 8:pm or 9:pm

Sari wahaw = Early part of night
Nim shaf = Midnight
Zahri wahaw = Later part of Night
Sahir = End of night (BL,1986 : 59)

Makran:

Sohb = Morning

Nahari-e-Wahd = Breakfast time 9 to 10:am

Nimroch = Midday

Begah = Afternoon

Shaam = Evening

Sar shap = First period of Life

Nim shap = Midnight

Lunj = After Midnight

Mazanen guarbaam/ Baangwa = Early dawn

Baam/Baangwa = Dawn (MK, 1986 : 215,216)

Sarawan and Jahlawaan:

Saaf = The period about dawn
Sobh = Morning
Dehtik (rotik) = Sunrise
Chasht, Chast = About two hours after sunrise
Swaara = Morning meal time
Nimroch = Noon
Pishim = Afternoon
Kaza Pishim = A little after 4:pm
Burz Deeger = About 5 o' clock winter and 6 o' clock in summer
Deegar = 5:pm to Sunset
De-kiahlleng (rokapt) = Sunset
Bithrapa = Evening darkness.
Shaam = Soon after sunset
Khuftan = 8 to 10 pm in winter and 9 to 10 pm in summer

Nem shaf = Midnight
Sahur or Balla Sobh or kukur na baang = The period some two hours before dawn
(SR,1986 : 146)
(Brahui,1978:253)

Kharan, Chagai, Noshki:

Sahar = A little before dawn
Ispeda rang/damag, Murg ae semi baang = Dawn
Numaz/sohb = Dawn
Rochtik = Sunrise
Yak neza = When the sun is on lance length high
Do neza = When the sun is on two lance lengths high
Sai neza = When the sun is three lance lengths high
Chasht = 8 to 10 am
Swaara = 10 to 11 am
Nemroch = Midday
Awal peshim = 1 to 2 pm
Peshim = 2 to 3 pm
Kaza peshim = 4 pm winter and 5 pm in summer
Deegar = 5 pm to sunset
Roch aershut = Sunset
Shaam = One hour after sunset
Khuftan = 8 to 10 pm
Nem shap = Midnight

The night is divided into three parts called baang (crows of the cock)

Awali baang = 12 o'clock midnight till 2 am
Domi baang = 2 am till 4 am
Semi Baang = 4 am till 6 am (KH,1986 : 110)

Solar year:
The solar year is divided into Nine chillas(forty and half day per chilla)
The solar year begins in November with the

1. Chilla-e-khushk.
2. Chilla-e-tarr.
3. Chilla-e-sia.
4. Chilla-e-sabz.

5. Chilla-e-zard.
6. Ahanr.
7. Saanwanr.
8. Sohel.
9. Nafth . (CH,1986 : 121)(Brahui,1978:83)

Lunar Year: (Islamic calander begins by muharram (ya Hussaini)) .

1. Ya Hussaini .
2. Safari .
3. Awlee guaar/eer .
4. Domi Guar/Iramee eer .
5. Saimee Guar/ eer .
6. Guddi Guar/ eer .
7. Khudai Mah/khuda-na tooh .
8. Paanzda Murdhahi .
9. Rochag/ Rocha .
10. Gwandain/Chunka aeid .
11. Niam Aeidaan .
12. Mazanen/ Balla aeid .

The days of the week :

1. Yak shambe (Sunday) .
2. Do shambe .
3. Sai shambe .
4. Chaar shambe .
5. Panch shambe .
6. Jomah/aadena .
7. Shambe/ Awal haftha . (SR,1986:126)

In Bolan and Quetta the days of the week are:

1. Aachar (Sunday)
2. Sumar
3. Angaaro
4. Arba
5. Khamis
6. Jumma
7. Chhanchanr (BL,1986 : 58)

Perennial Irrigation consisted of springs, karezes and streams .

Karez is an underground sloping tunnel carries water to the surface ground. Karez is considered to be an ancient mean of irrigation.

In ancient days Karez and Spring water was divided through the position of sun or sundial (day times) and through the positions, appearance of moon and stars or by water clocks (taas).

The shares of water division were such as :

Shawaana = a day and night flow of water (24 hours)

Nim Shawaana = Half a Shawaana (also known as bel, tah, keela, wakht or khaam Shawaana).

Paas: = equal to three hours. The division was done during the day time by sundial and during the night by reference to the stars or by water clock. (SR,1986:114) (MK,1986:194).

Water distribution in Makran.

1 ½ taas = nim abba

2 nim abba = 1 abba or 1 nim tassu

2 nim tassu = 1 tassu

2 tassu = 1 nim hangaam

2 nim hangaam = 1 hangaam

7 hangaam = a day and night flow of water (MK,1986:196)

Sarawaan, Jhalawaan:

2 nim paas = 1 paas (3 hours)

4 paas = 1 bel (12 hours)

2 bel = 1 Shawaana (in kalat the paas is equal to 6 Hours).

Noshki:

4 deegar = 1 paas

4 paas = 1 taa, 1 nim shawaana (also 1 khaam shawaana)

2 taa = 1 shawaana

Chagai:

2 nim Chaarik = 1 bel

2 bel = 1 shawaana

Bolan:

2 kamaan `= 1 shabana

2 shabana = 1 bit

4 bit = 1 tir

When water is abundant, a tir represent the flow of 24 Hours. In the year of deficient supply however, the tir is reduced to 12 Hours. (BL,1986:52) .

(water clock): **Taas-o-aab**: It is the oldest time measuring method. Some resources claim that water clocks appear in China as early as 4000 BC (Wikipedia.org, 18-12-2015, 8: pm)

Taas-o-aap (water clock): Taas-o-aap system of measurement was used for the distribution of water during nights or cloudy days. The water clock consisted of a metal bowl, 3 inches in diameter and 2 inches in depth. A tiny hole made in the centre of the base and the bowl was allowed to float in a basin of water the time it took to sink was 1 Taas. (MK, 1986 : 95)

Water clock

Sundial: Measuring time by movement and position of the sun is the natural division of the day. As the sun changes its position across the sky shadows change in length and direction, so the local time can be measured by a simple sundial.

The first device (5000 – 3500 BC) for indicating the time of day was probably the "Gnoman", it consisted of a vertical stick or pillar; the length of the shadow it cast gave an indication of the time of day (accurate sundials.com, 9-12-2015, at 5 pm)

The local dial which furnishes an accurate guide, consists of a straight stick twelve fingers high, which is divided into four equal parts and planted into level ground. The subsequent operations can be more conveniently explained by the following diagram.

AB represent the stick and CH the ground line. At sunrise the shadow AC is double the length of the stick and is divided into 8 equal parts. The first deegar (at noshki) is over when the shadow reaches D, or 1 ¾ of the length of the stick, and the second and third when the shadow reaches E and F respectively; each subsequent digar being represented by one division. At midday 8 digar or 4 pass are over and in the afternoon the reverse process is followed, each digar being marked by the lengthening shadow along the line AH. (CH,1986 : 112)

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