Tesis doctoral

Departament d'Antropologia Social i de Prehistòria

Noelithic economy and macro-lithic tools of the Central Balkans

ANNEXES

Vesna Vuckovic

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Director

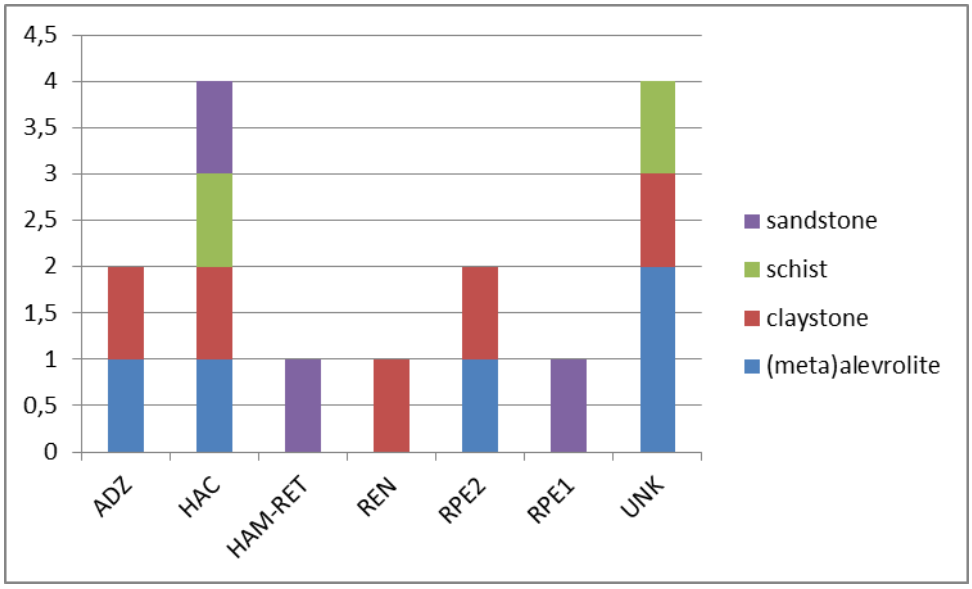


Fig. A1.1. At: correlation between geology and type of tools; N= 16.

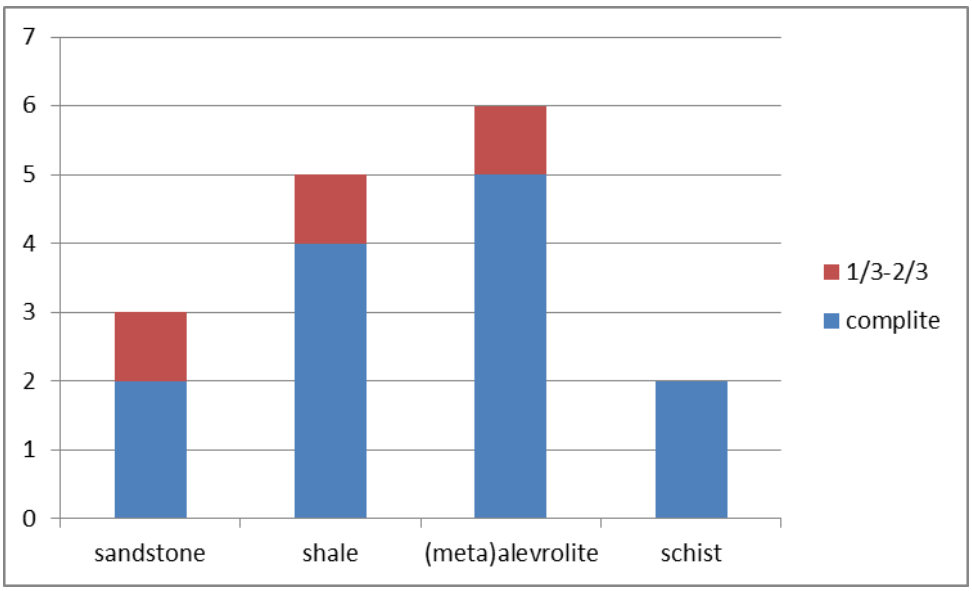


Fig. A 1.2. At: preservation of the tools according to geology; N= 16.

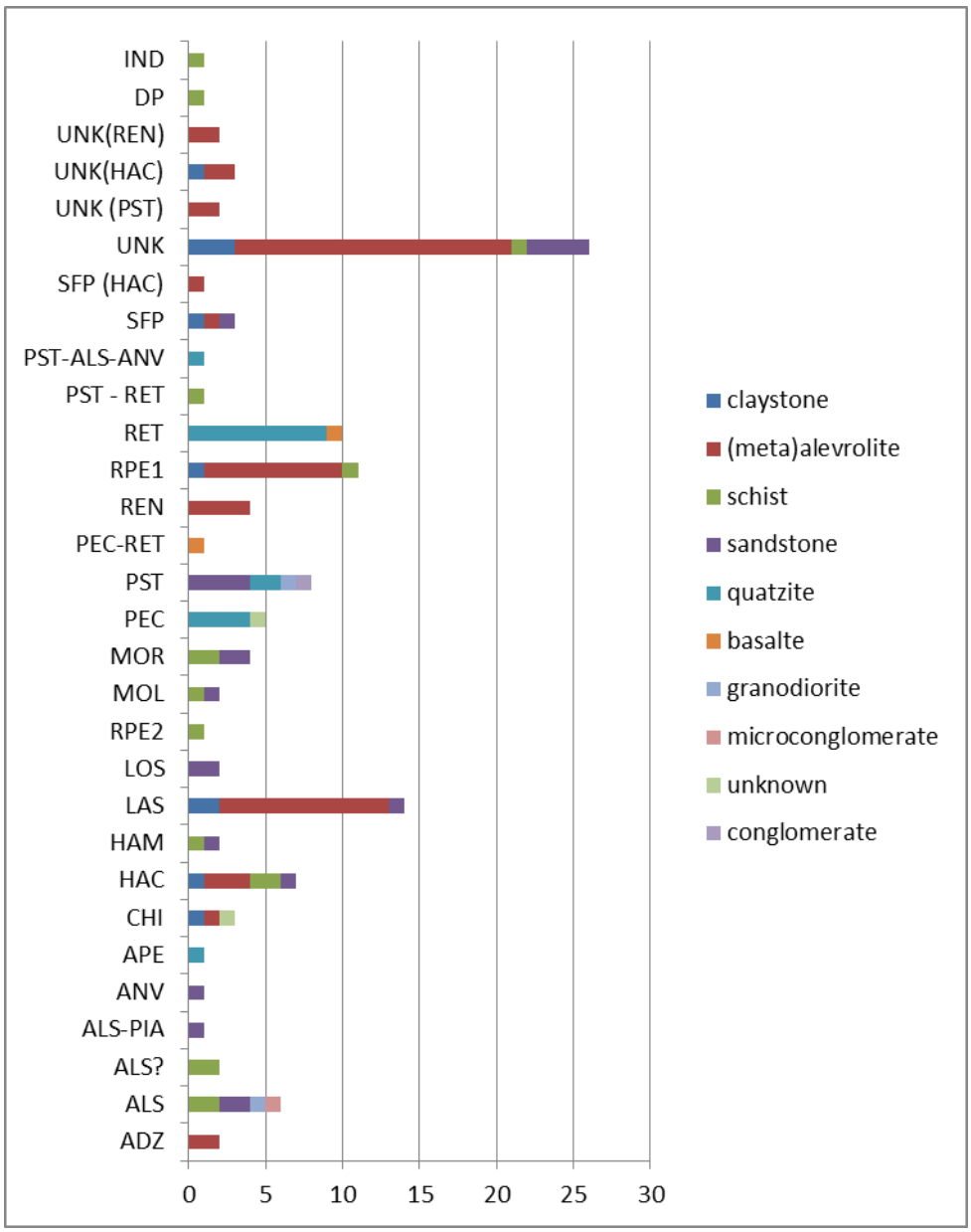


Fig. A1.3. Potporanj: correlation between geology and type of tools; N= 130.

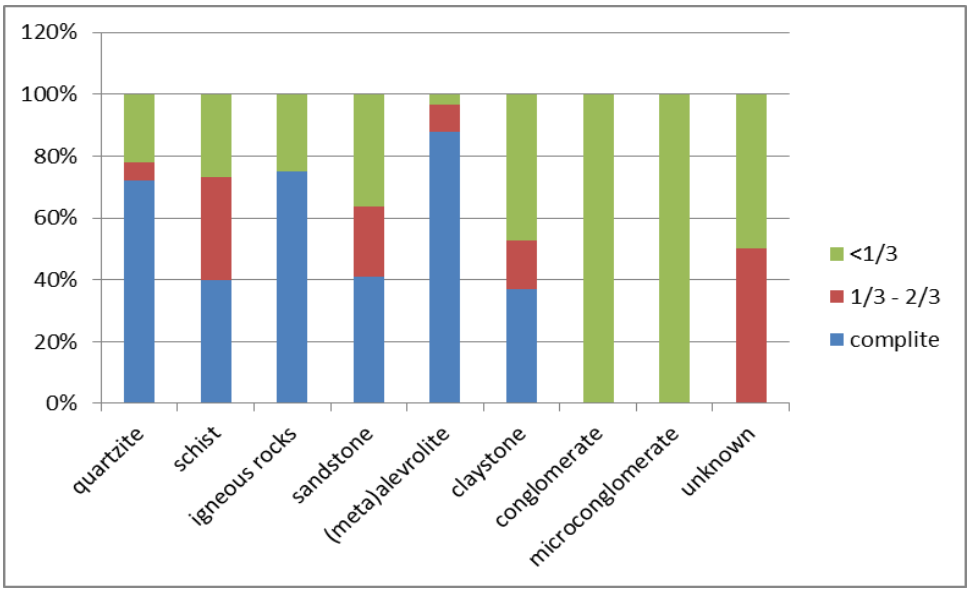


Fig. A 1.4. Potporanj: preservation of the tools according to geology; N= 130.

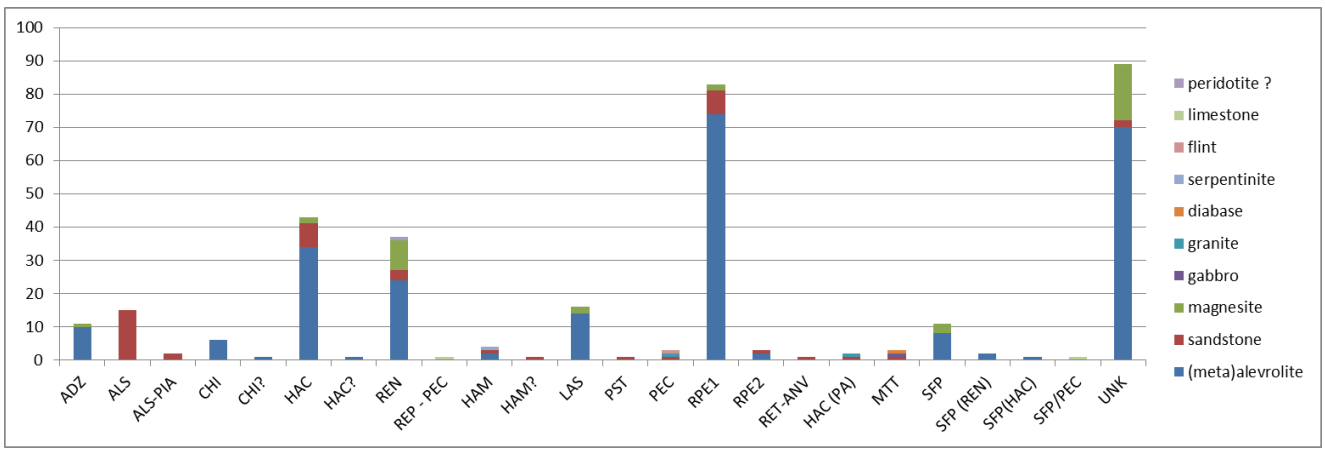


Fig. A 1.5. Benska bara: correlation between geology and type of tools; N= 338 .

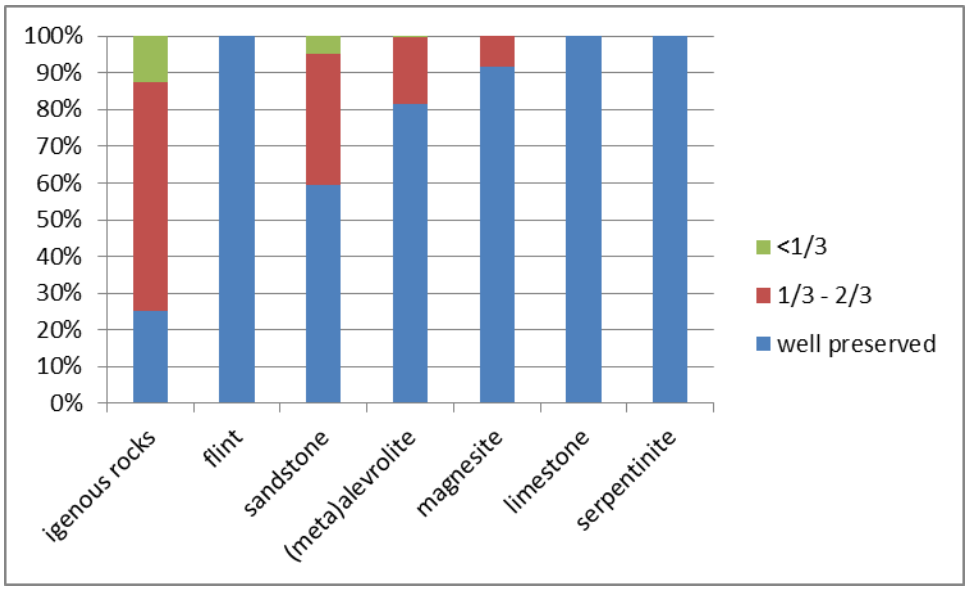


Fig. A 1.6. Benska bara: preservation of the tools according geology; N= 338.

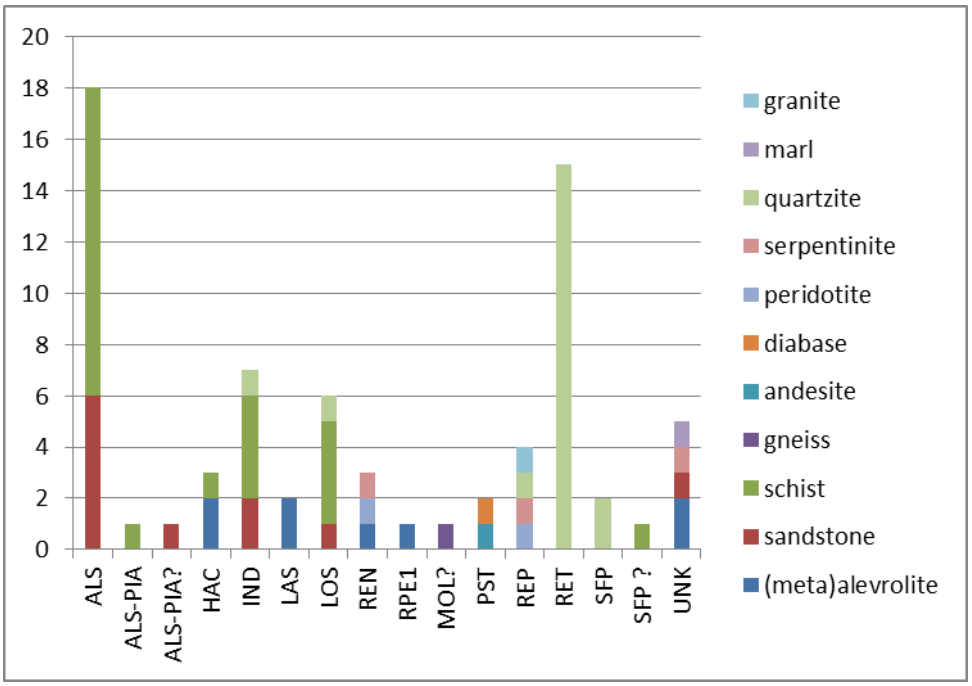


Fig. A 1.7. Medjureč: correlation between geology and type of tools; N= 71.

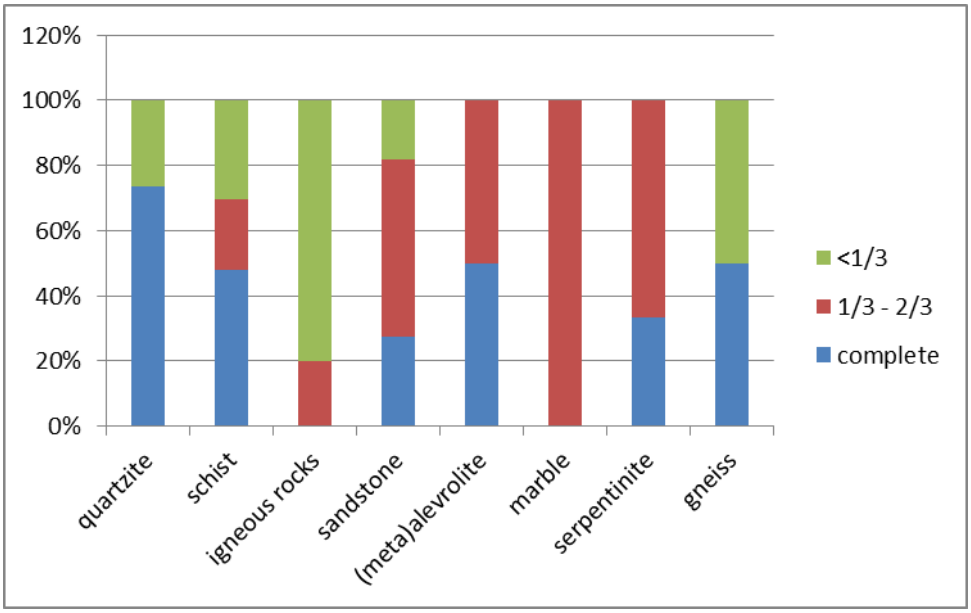


Fig. A 1.8. Medjureč: preservation of the tools according geology; N= 71.

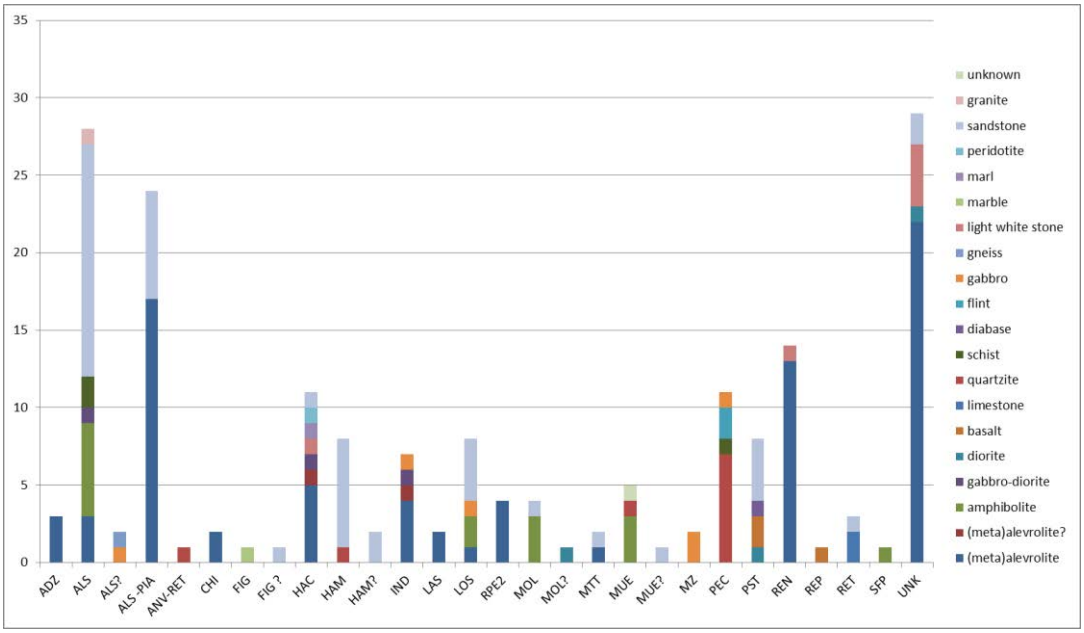


Fig. A 1.9. Motel Slatina: correlation between geology and type of tools; N= 187.

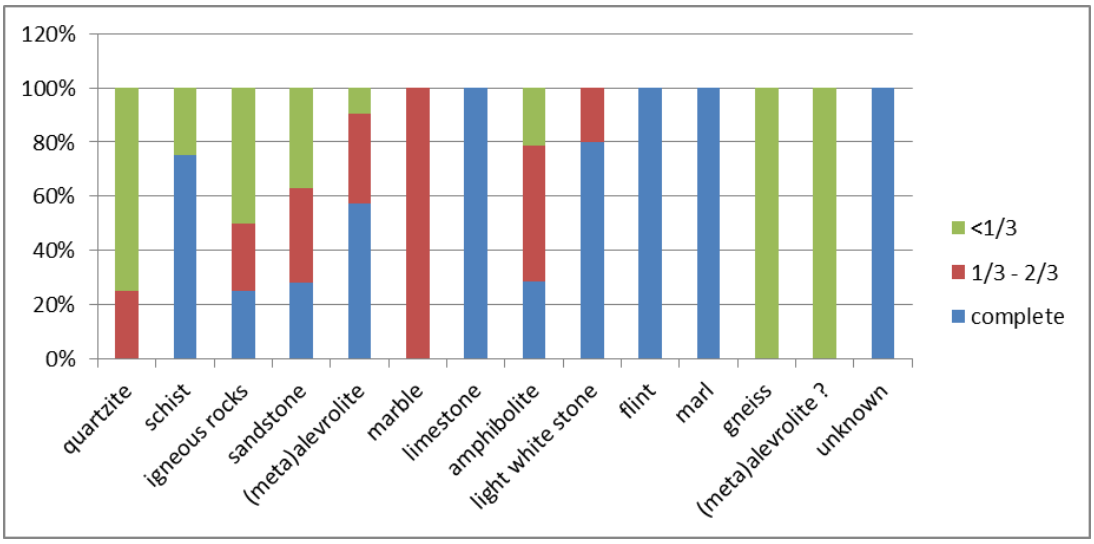


Fig. A 1.10. Motel Slatina: preservation of the tools according to geology; N= 187.

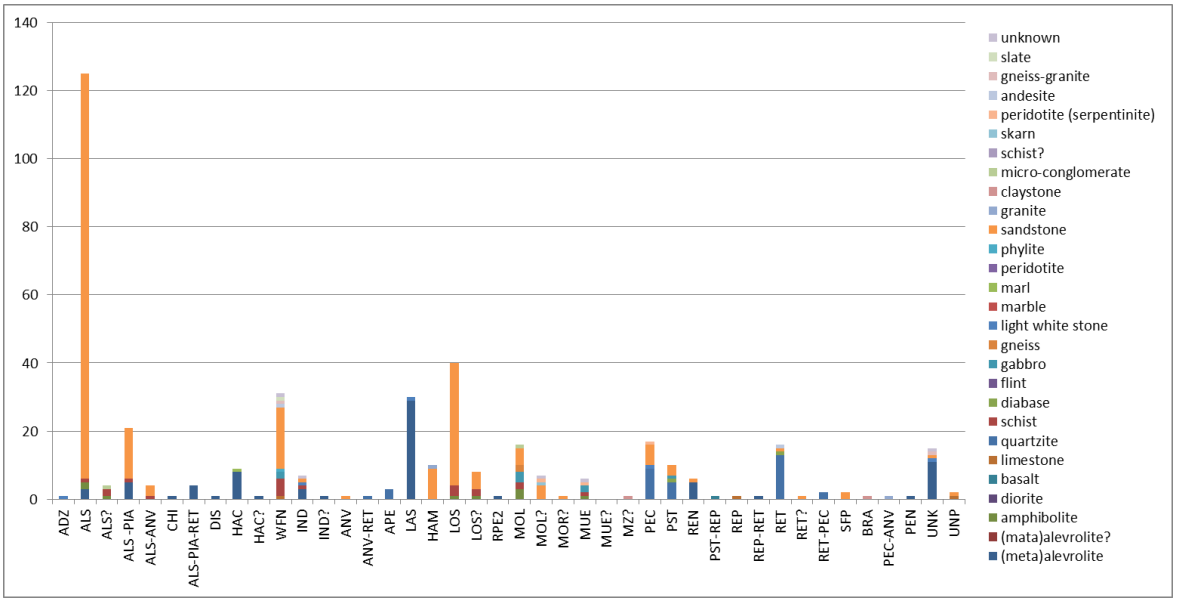


Fig. A 1.11. Turska česma: correlation between geology and type of tools; N=416

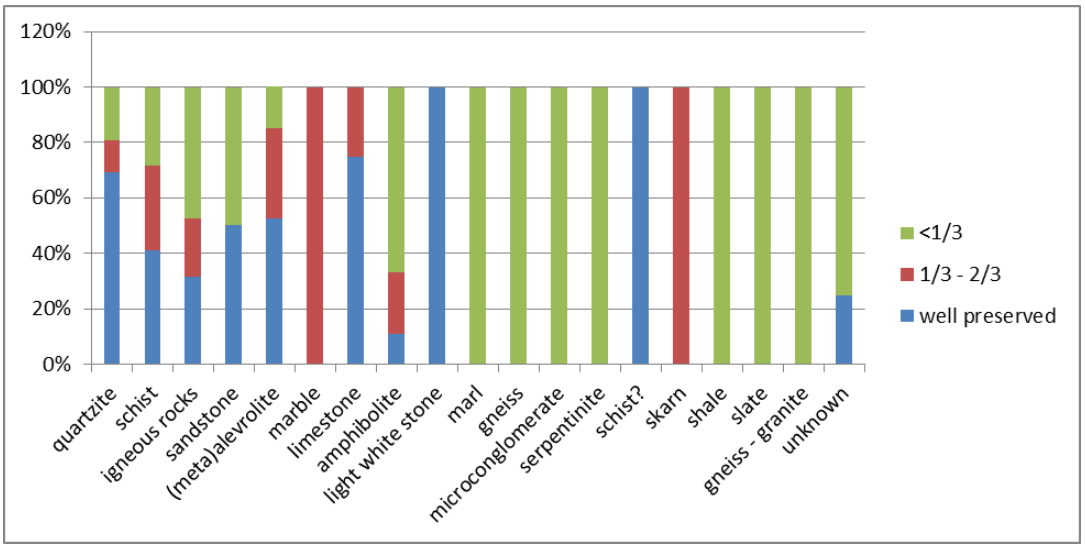


Fig. A 1.12. Turska česma: preservation of the tools according to tgeology; N= 416.

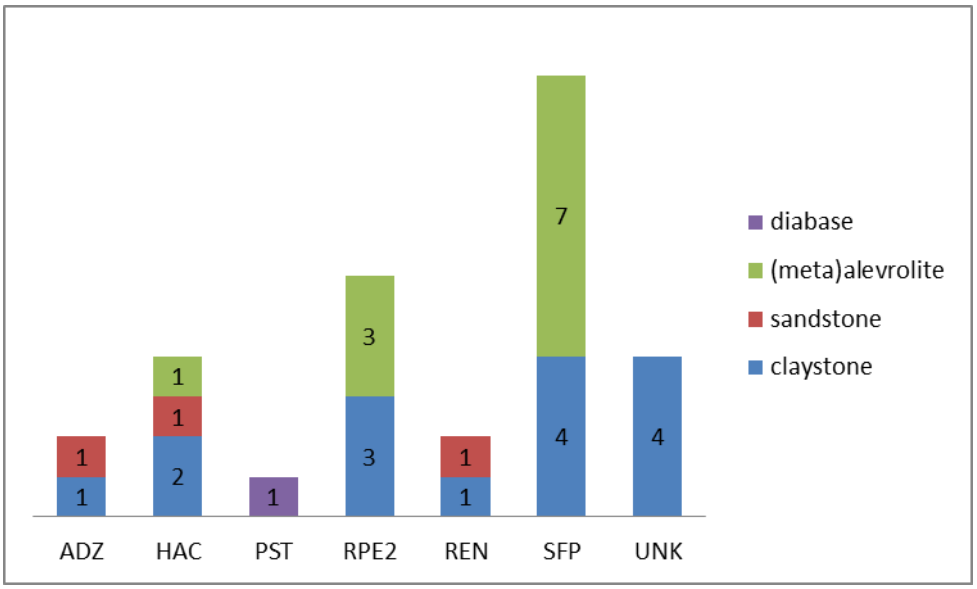


Fig. 1.13. Kremenilo: correlation between geology and tool type in the Early/Middle Neolithic horizon; N= 30.

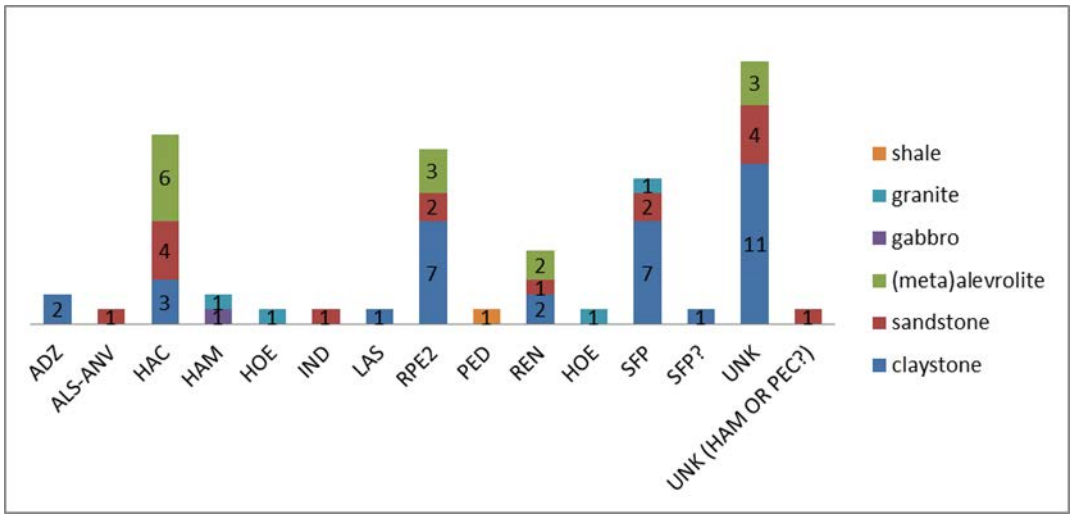


Fig. 1.14. Kremenilo: correlation between geology and type of tools in the Late Neolithic horizon; N= 69.

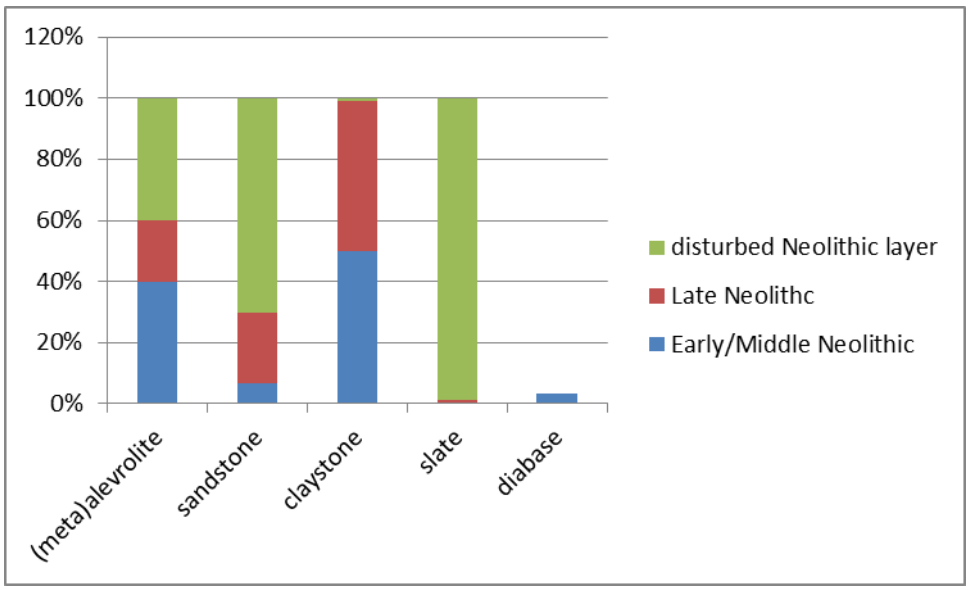


Fig. 1.15. Kremenilo:use of geology according to chronolog including the objects from disturbed deposti; N=221.

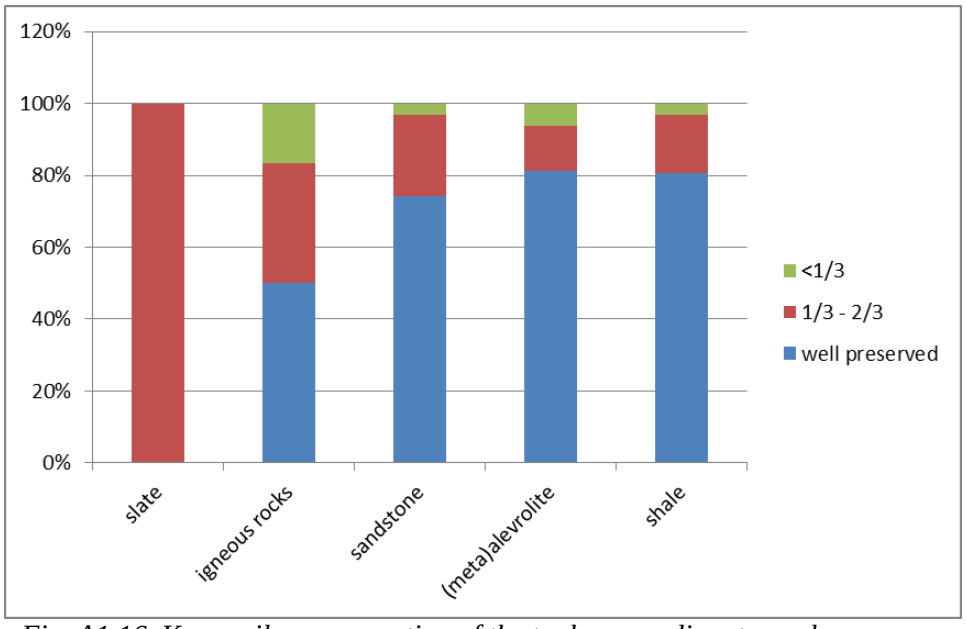


Fig. A1.16. Kremenilo: preservation of the tools according to geology; N= 221.

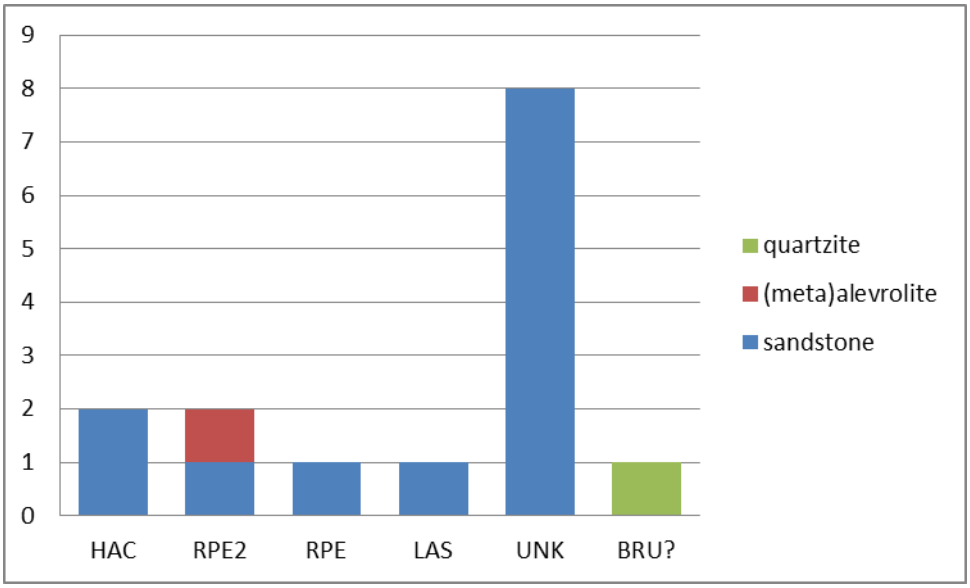


Fig. A1.17. Vranjani: correlation between geology and type of tools; N=15.

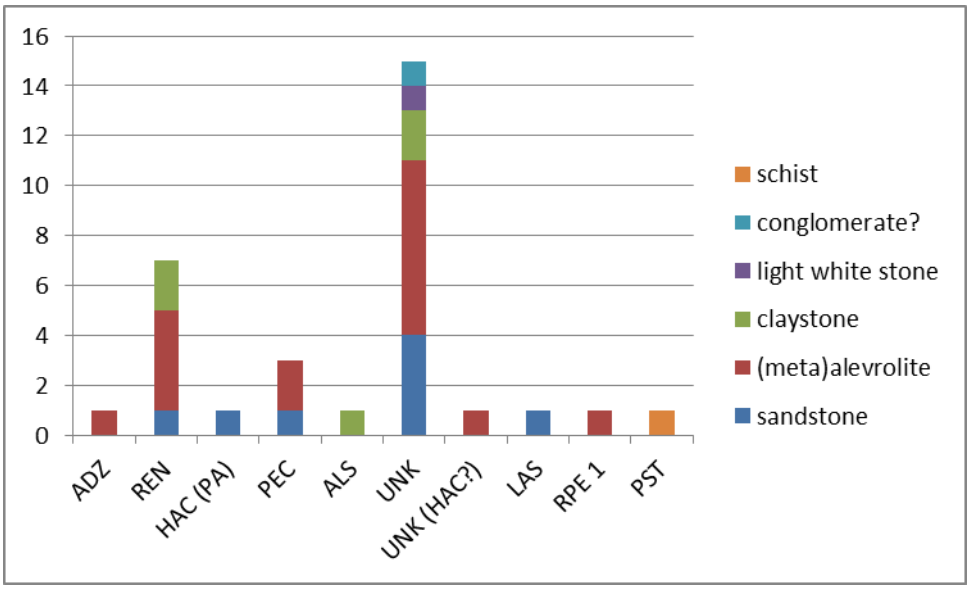


Fig. A1.18. Koraća Han: correlation between geology and type of tools; N=35.

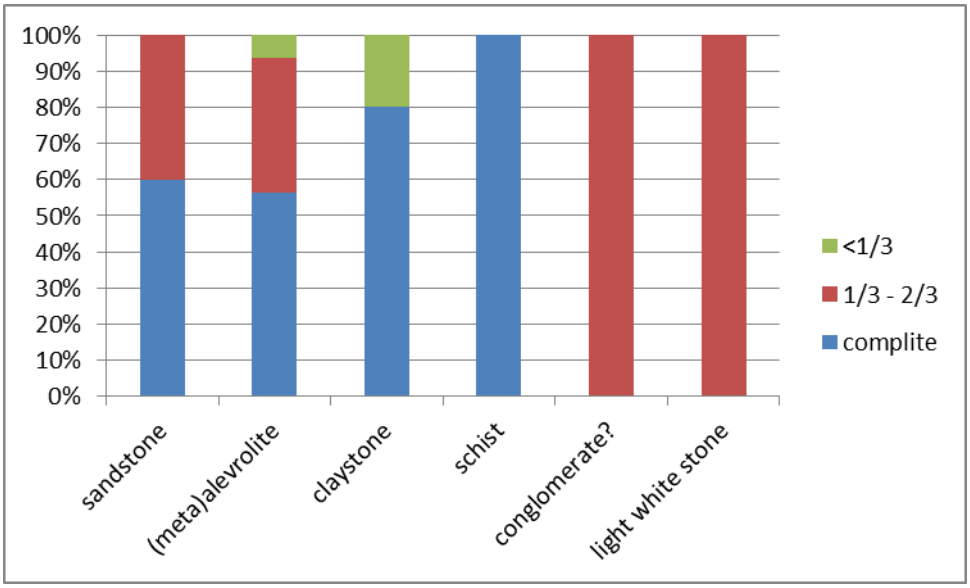


Fig. A1.19 Koraća Han: preservation of the tools according geology; N=35.

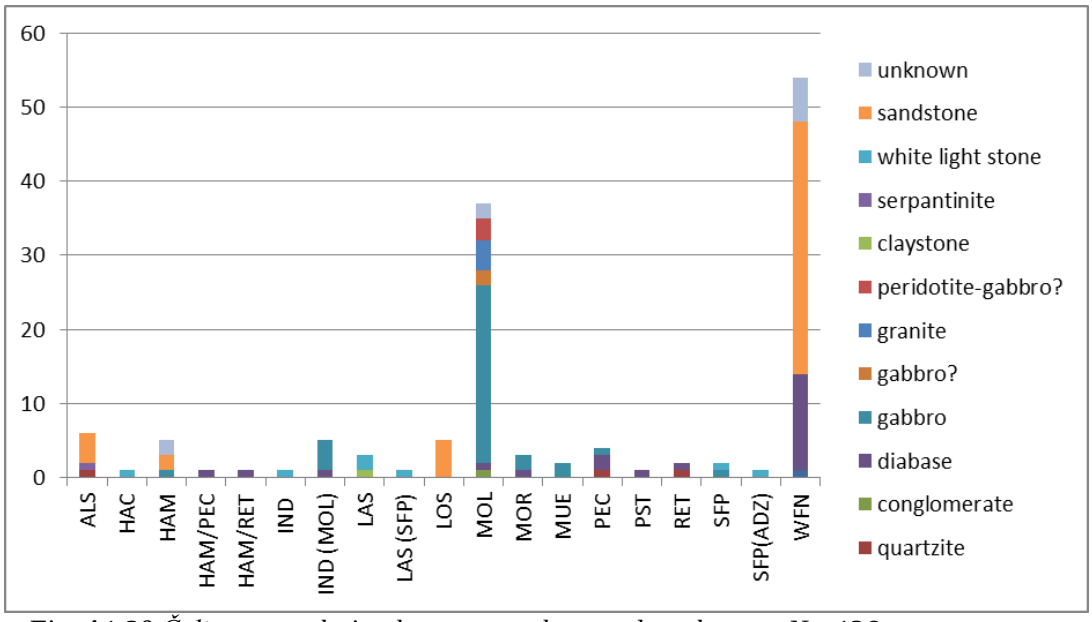


Fig. A1.20.Čelina: correlation between geology and tool types; N= 136.

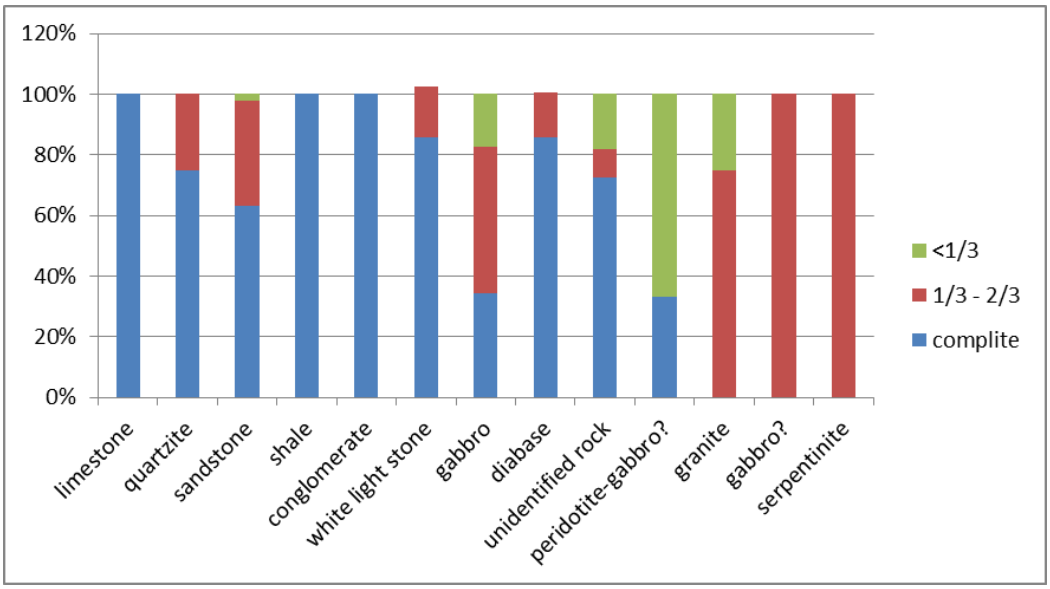


Fig. A1.21.Čelina: preservation of the tools according to geology; N=136.

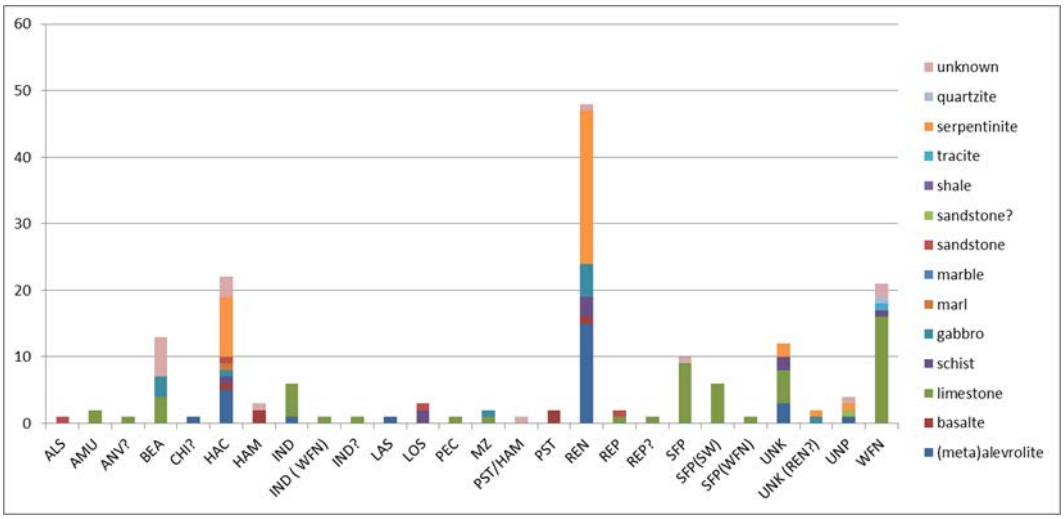


Fig. A1.22.Tumba Madžari: correlation between geology and tool types; N=172.

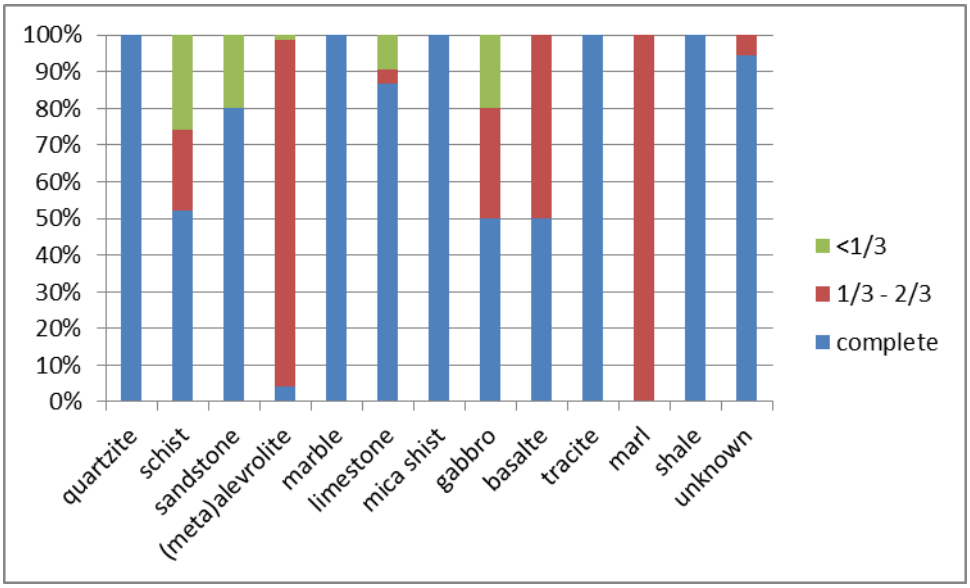


Fig. A1.23. Tumba Madžari: preservation of the tools according to geology; N= 172.

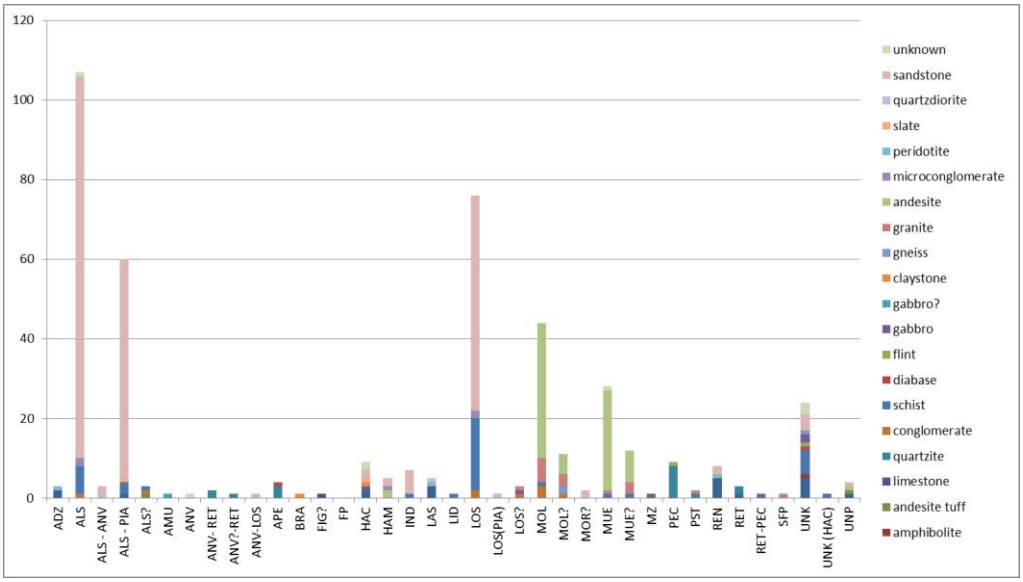


Fig. A1.24. Gumnište: correlation between geology and tool types; N=447.

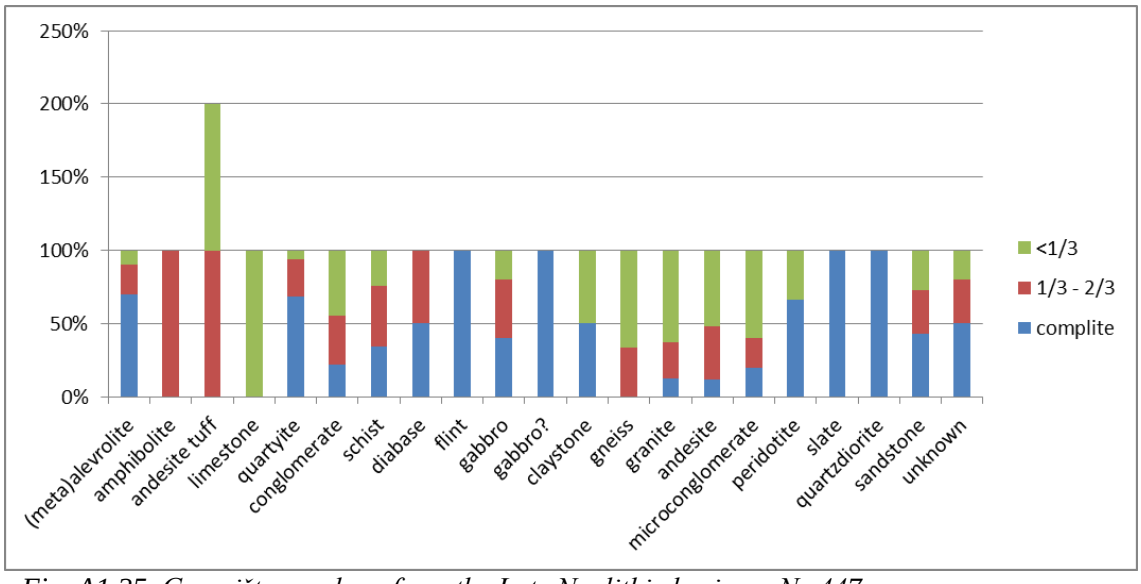


Fig. A1.25. Gumnište: geology from the Late Neolithic horizon; N=447.

Geology and tool type (production stage)			
region	settlement	specific activities	specific geology
Northern	At	-percussion, -cutting and fine work on materials such as wood or bone,	sandstone, claystone
	Potporanj	-percussion, -abrasion -cutting and fine work on materials such as wood or bone, - secondary modification	quartzite, basalt, schist, (meta)alevrolite
	Benska Bara	-cutting and fine work on materials such as wood or bone, - secondary modification , -abrasion, -percussion -manufacturing	(meta)alevrolite, sandstone limestone
Central	Medjureč	-percussion, -abrasion, -grinding, - secondary modification	quartzite, schist, (meta)alevrolite,
	Motel Slatina	-grinding, -abrasion, -percussion, -cutting and fine work on materials such as wood or bone, - secondary modification , -figurine, - maze, -manufacturing	sandstone, (meta)alevrolite, marble, gabbro, gabbro-diorite amphibolite, basalt
	Turska česma	-grinding, -abrasion, -percussion, -cutting and fine work on materials such as wood or bone, -secondary modification, -manufacturing	sandstone, (meta)alevrolite, light white stone, claystone, quartzite
	Kremenilo	-percussion, -abrasion, -cutting and fine work on materials such as wood or bone, - secondary modification ,	igneous rocks, sandstone, slate

Western		-manufacturing - objects of esthetic porpose	
	Vranjani	-fine work on not so hard materials such as wood or bone and cutting, -percussion, - secondary modification ,	sandstone, (meta)alevroilte
	Koraća Han	-cutting and fine work on materials such as wood or bone, -percussion, - secondary modification , -abarsion	(meta)alevroilte, sandstone, claystone
	Čelina	-grinding -fishing or house construction -abrasion, -percussion, -cutting, -manufacturing, - secondary modification ,	sandstone white light stone, diabase, gabbro,
Southern	Tumba Madžari	- objects of esthetic propose, - fishing, -percussion, - secondary modification ,	limestone, schist, (meta)alevroilte
	Gumnište	- grinding, -abrasion, -manufacturing, - secondary modification , - objects of esthetic propose,	sandstone, andesite, quartzite, claystone, limestone, schist, gabbro, granite

Table A 1.1, Results of correlation between geology and tool type (production stage).

breakage pattern of tool type according to geology (wear stage)

region	settlements	wear	activity
Northern	At	the tools are in the same level of wear	
	Potporanj	claystone	cutting and fine work on materials such as wood or bone
	Benska Bara	igneous r.	percussion
Central	Medjureč	sandstone	abrasion
	Motel Slatina	sandstone, amphibolite, igneous r.	grinding, abrasion, percussion
	Turska česma	igneous r. schist,	grinding, abrasion,
Western	Kremenilo	igneous r.	percussion
	Vranjani	sandstone	cutting and fine work on materials such as wood or bone and percussion
	Koraća Han	alevroite	
	Čelina	gabbro	grinding
Southern	Tumba Madžari	alevroite, schist	cutting and fine work on materials such as wood or bone
	Gumnište	granite, andesite, conglomerate	grinding

Table A 1.2, Results of correlations between breakage pattern of tool type according to geology (wear stage)

distance of deposits in relation to settlements (procurement stage)

region	settlements	exploitation system	import of specific rock(s)
Northern	At	various	(meta)alevrolite
	Potporanj	various	claystone, peridotite
	Benska Bara	various	igneous, peridotite,
Central	Medjureč	various ?	andesite, (meta)alevrolite, quartzite, peridotite?
	Motel Slatina	various	(meta)alevrolite, marble, andesite
	Turska česma	various	marl, (meta)alevrolite, andesite
Western	Kremenilo	various ?	gabbro?
	Vranjani	local	
	Koraća Han	local	
	Čelina	local	
Southern	Tumba Madžari	local	
	Gumnište	local?	peridotite, gabbro diabase?

Table A 1.3, Exploitation system and imported raw material (procurement stage.)

region	settlement	community behavior	social work investment
Northern	At	opened	high
	Potporanj	opened	high
	Benska Bara	opened	high
Central	Medjureč	opened?	high?
	Motel Slatina	opened	high
	Turska česma	opened	high
Western	Kremenilo	self-sufficient?	low?
	Vranjani	self-sufficient	low
	Koraća Han	self-sufficient	low
	Čelina	self-sufficient	low
Southern	Tumba Madžari	self-sufficient	low
	Gumnište	self-sufficient?	low?

Table A 1.3, Results related to community behavior and social work investment.

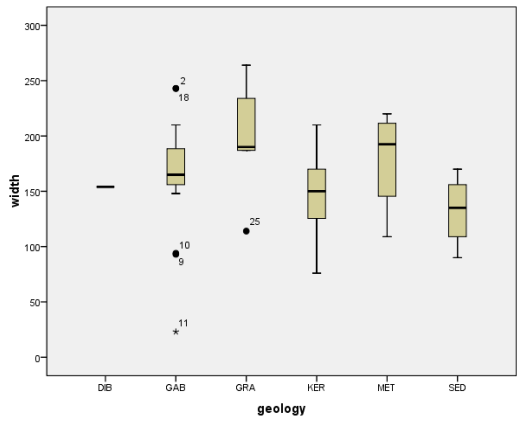


Fig. A. 2.1. Percentiles distribution of the width of the 50% to fully preserved grinding slabs according to geology; N= 50.

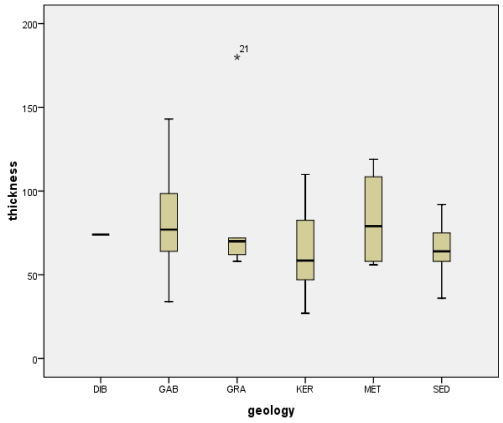


Fig. A. 2.2. Percentiles distribution of the thickness of the 50% to fully preserved grinding slabs according to geology; N= 50.

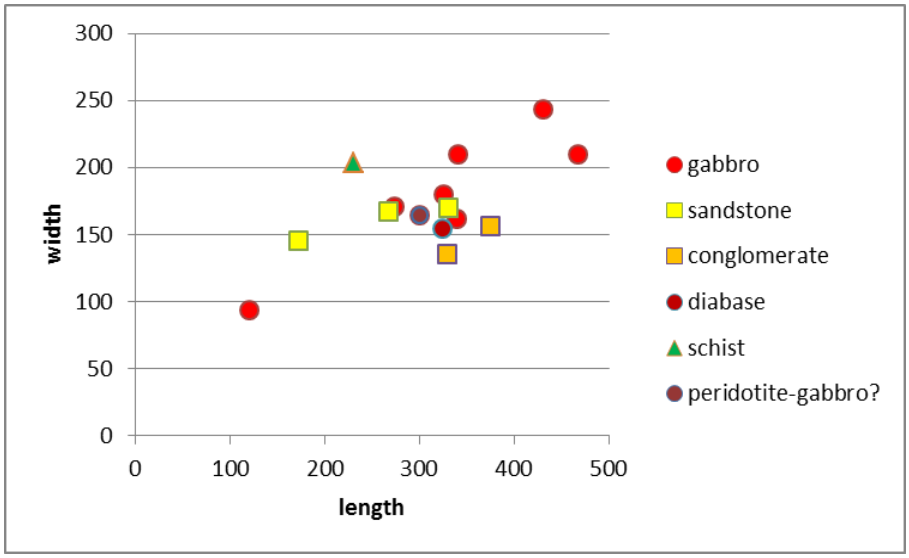


Fig. A 2.3. Grinding slabs: correlation between length, weight and geology; N=14.

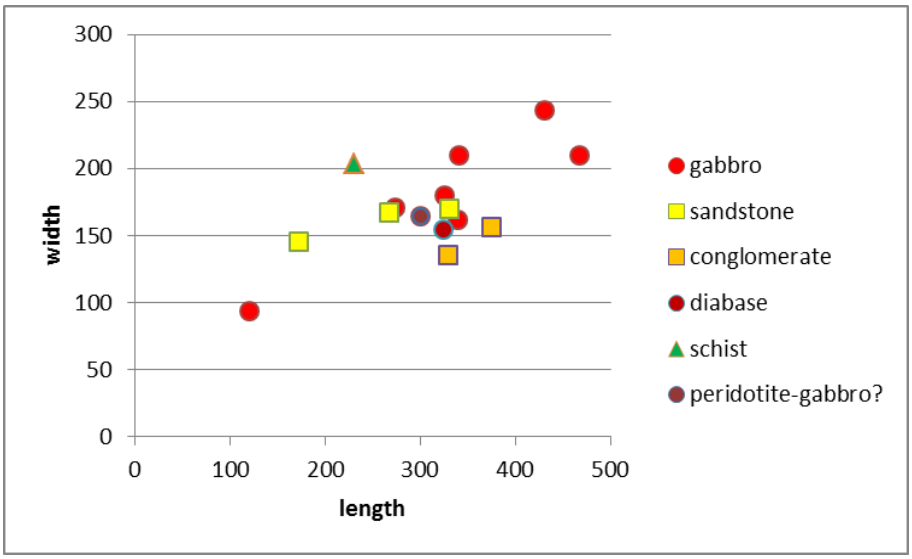


Fig. A 2.4. Grinding slabs: correlation between length, width and geology; N=14.

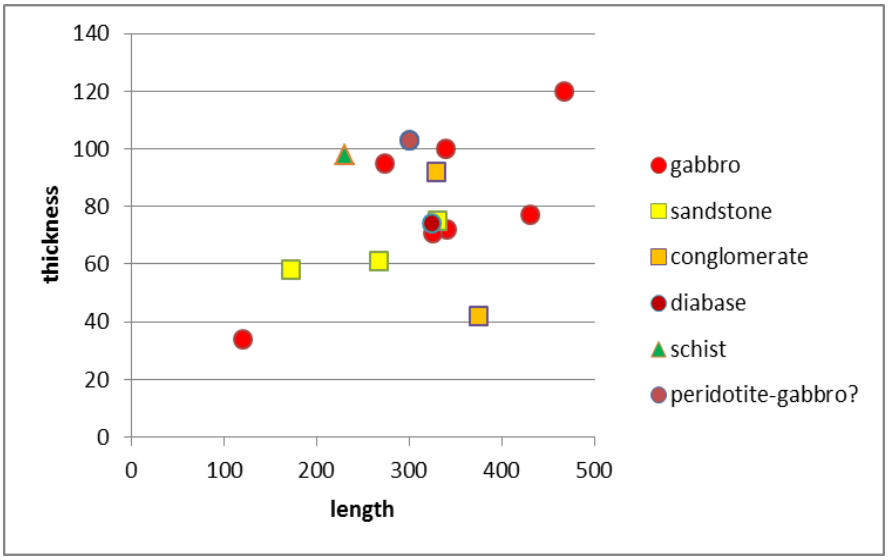


Fig. A 2.5. Grinding slabs: correlation between length, thickness and geology;N=14.

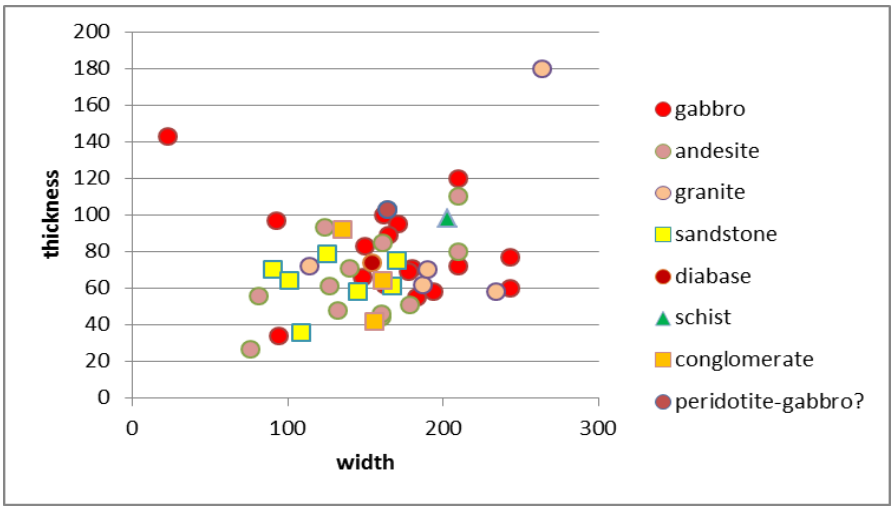


Fig. A 2.6. Grinding slabs: correlation between width, thickness and geology; N=50.

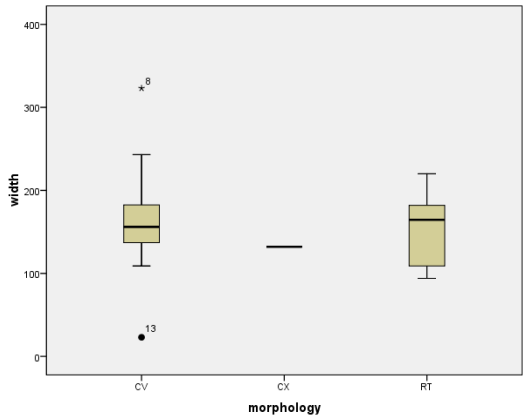


Fig. A. 2.7. Percentiles distribution of the width of the 50% to fully preserved grinding slabs according to morphology; N= 43.

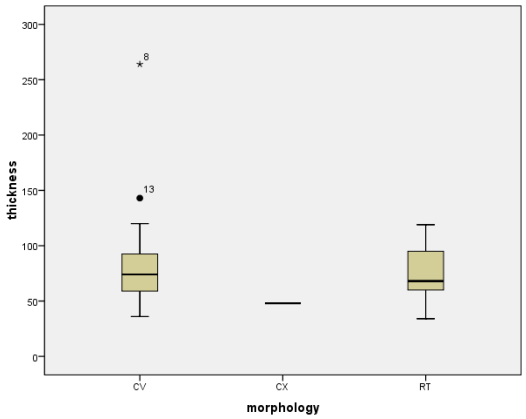


Fig.A.2.8. Percentiles distribution of the thickness of the 50% to fully preserved grinding slabs according to morphology; N= 43.

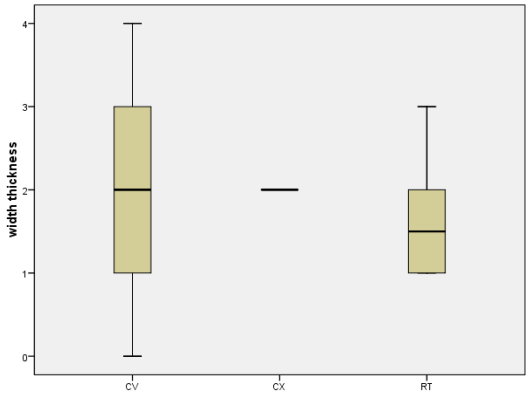


Fig. A. 2.9. Percentiles distribution of the relation width-thickness of the 50% to fully preserved grinding slabs according to morphology; N= 43.

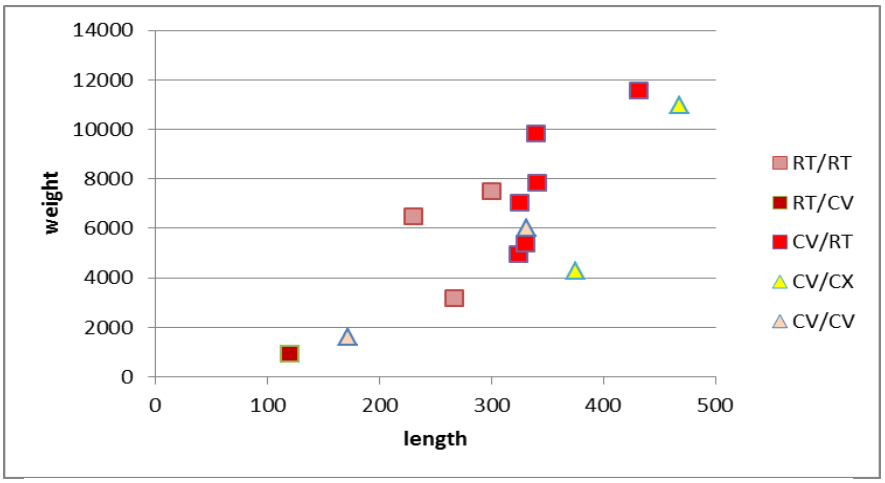


Fig. A 1.10. Grinding slabs: correlation between length, weight and morphology; N=14.

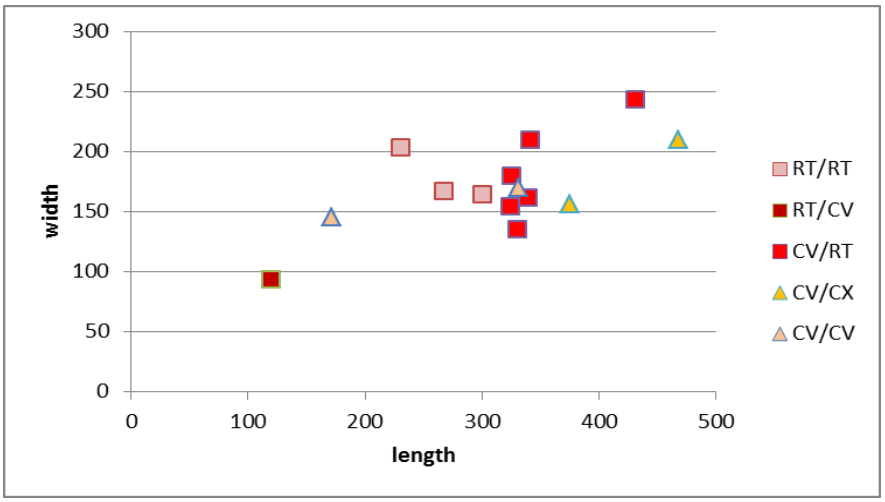


Fig. A 2.11. Grinding slabs: correlation between length, width and morphology; N=14.

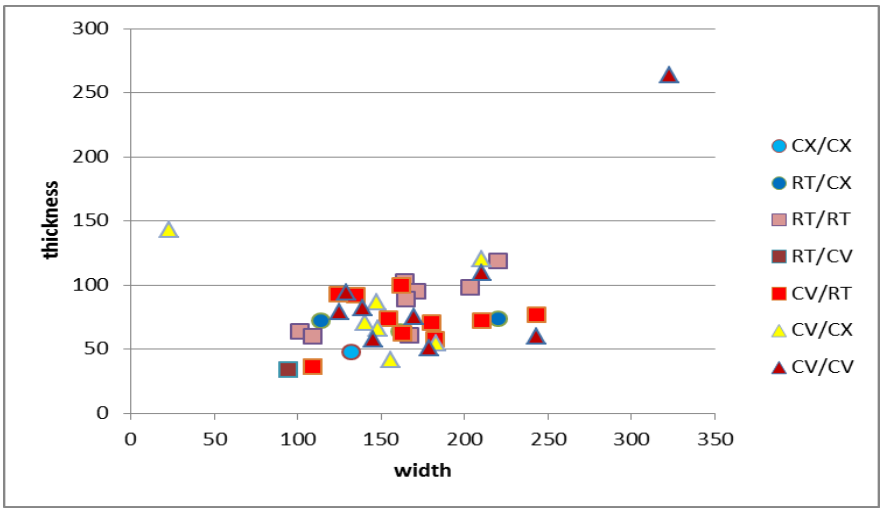


Fig. A 1.12. Grinding slabs: correlation between the width, thickness and morphology; N=42

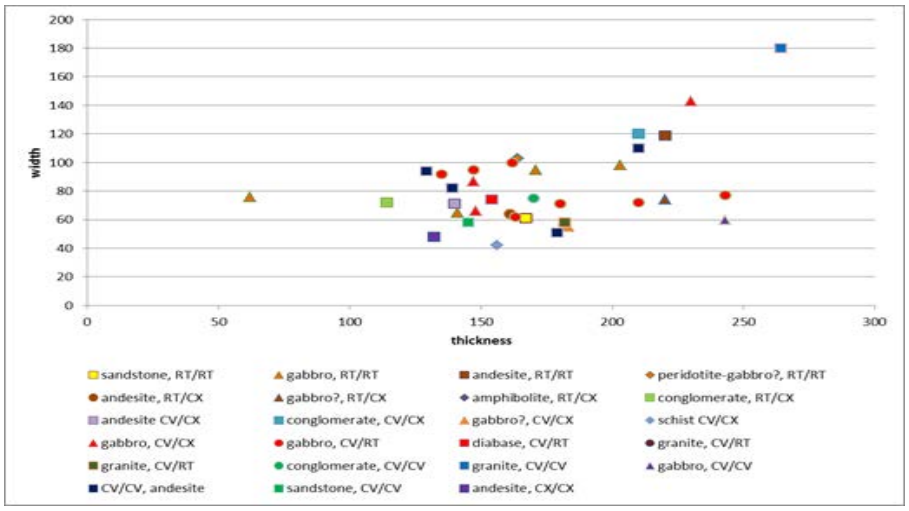


Fig. A 2.13. Grinding slabs: correlation between the width, thickness and morphology; N=42

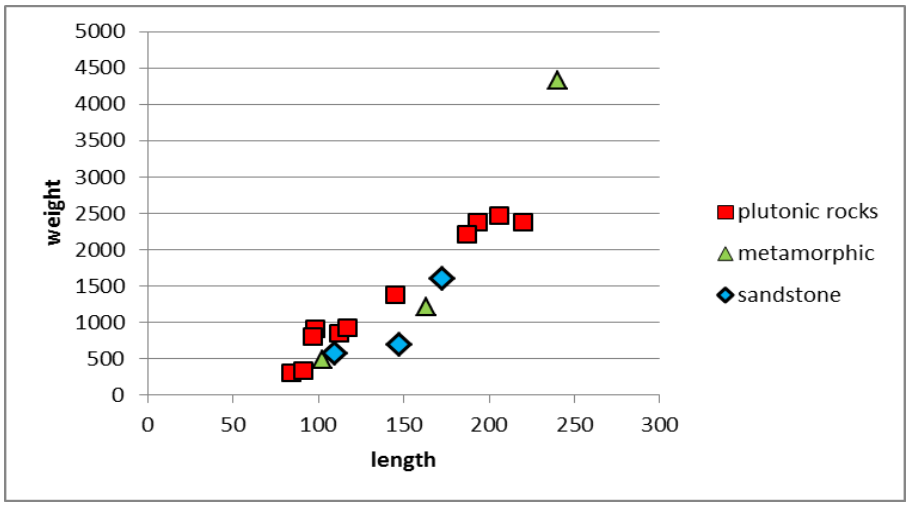


Fig. A 2.14. Hand stones: correlation between length, weight and geology; plutonic tools: $R^2 = 0,822$; N=17.

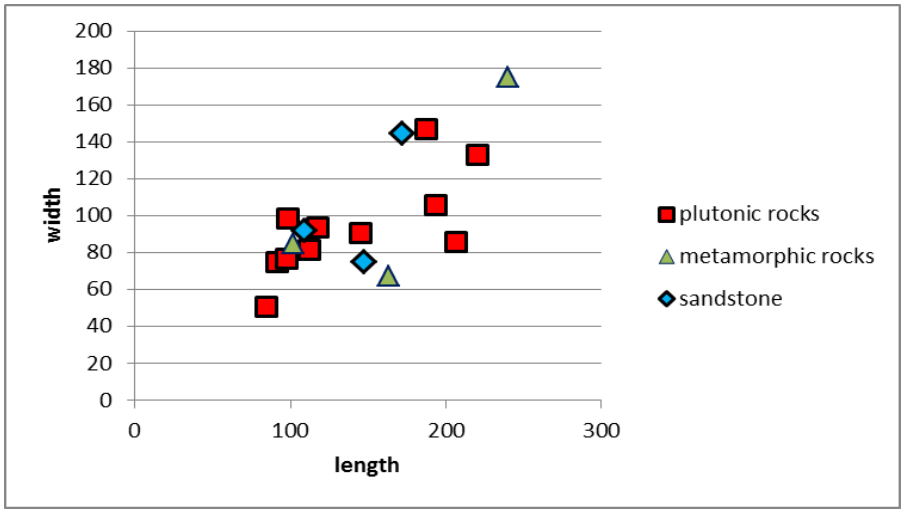


Fig. A 2.15. Hand stones: correlation between length, width and geology;plutonic $R^2 = 0,464$; N=17.

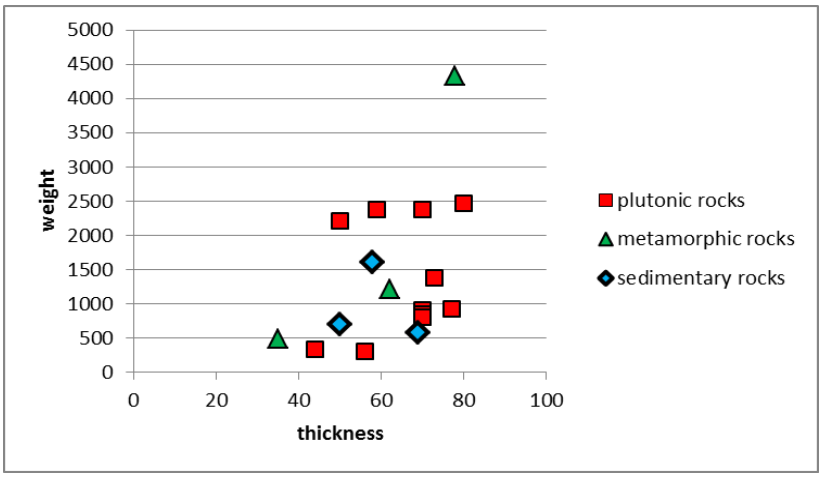


Fig. A 2.16. Hand stones: correlation between thickness, weight and geology; N=17.

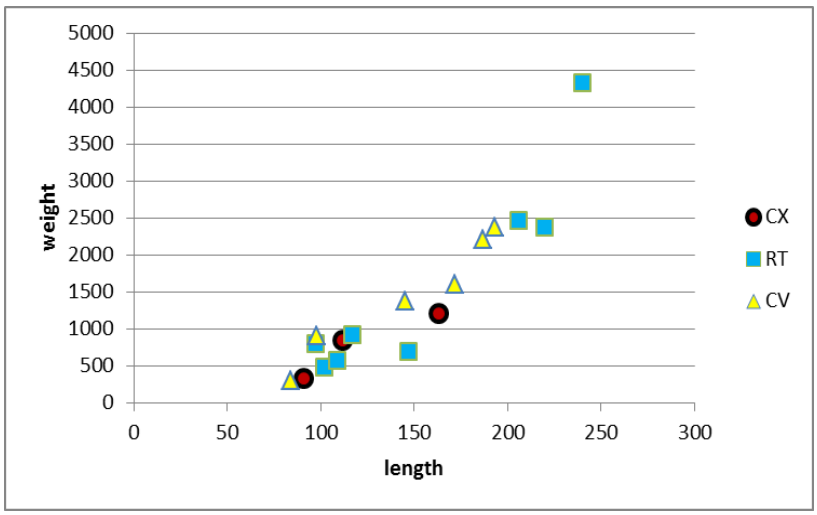


Fig. A 2.17. Hand stones: correlation between length, weight and morphology; flat (RT) active sides: R^2 =0,6387; concave (CV) active sides: 0,812; N=17.

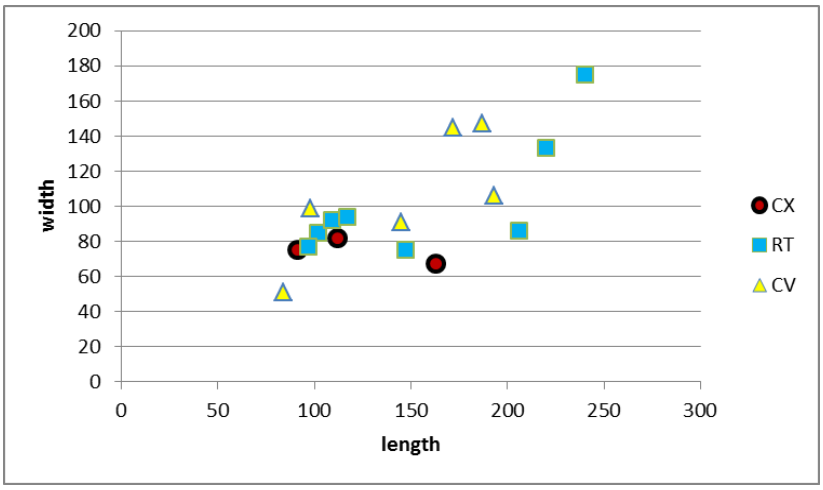


Fig. A 2.18. Hand stones: correlation between length, weight and morphology; flat (RT) active sides: R^2 =0,4668; concave (CV) active sides: 0,5747; N=17.

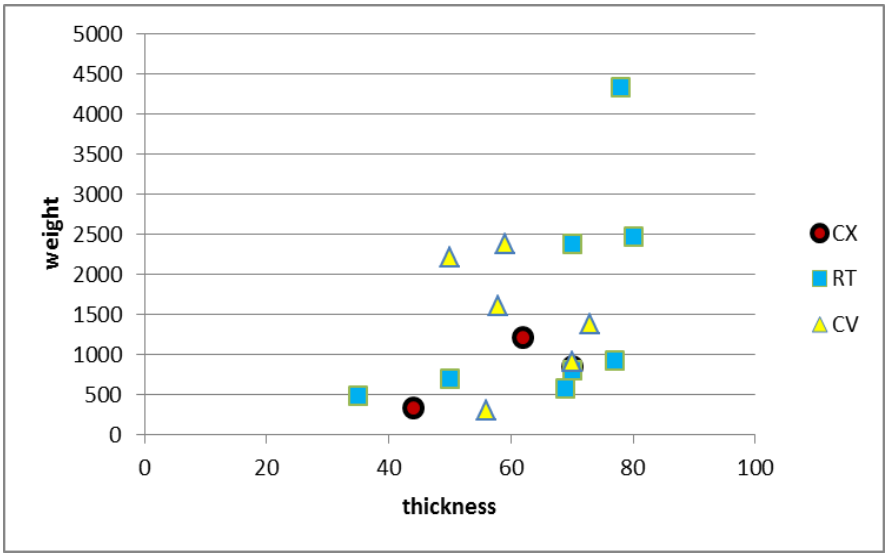


Fig. A 2.19. Hand stones: correlation between length, weight and morphology; N=17.

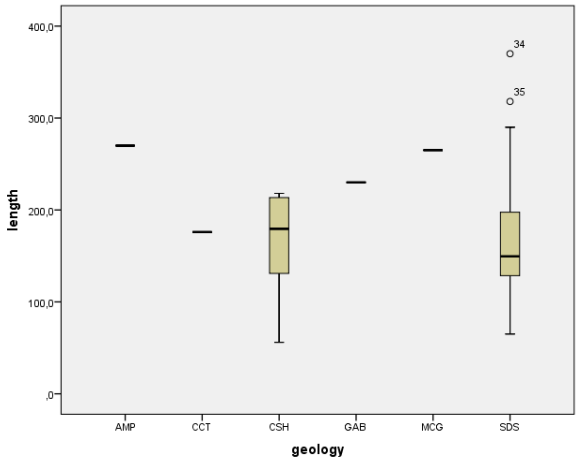


Fig.A 3.1. Percentiles distribution of the length of the fully preserved objects according to geology; N= 35.

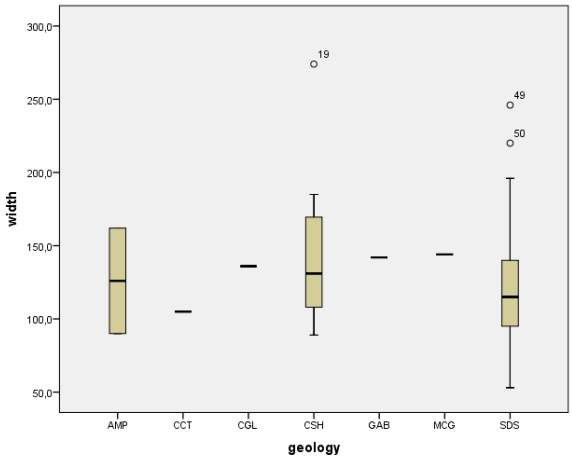


Fig.A 3.2. Percentiles distribution of the width of 50% to the fully preserved objects according to geology; N= 75.

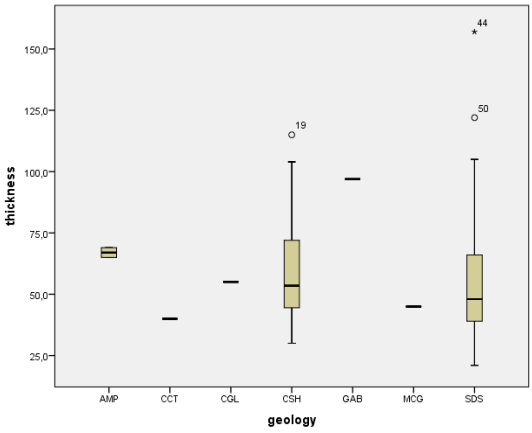


Fig.A 3.3. Percentiles distribution of the thickness of 50% to the fully preserved objects according to geology; N= 71.

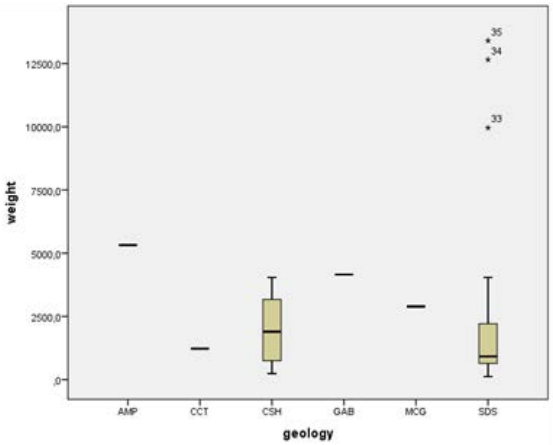


Fig.A 3.4. Percentiles distribution of the weight of fully preserved objects according to geology; N= 34.

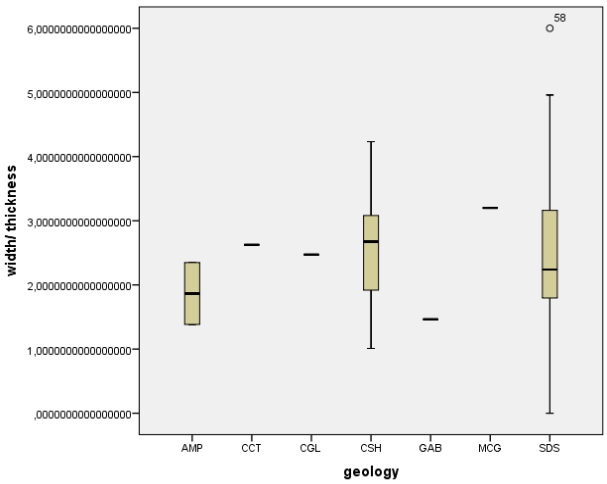


Fig.A 3.5. Percentiles distribution of relation width/thickness of the 50% to fully preserved objects according to geology; N= 71.

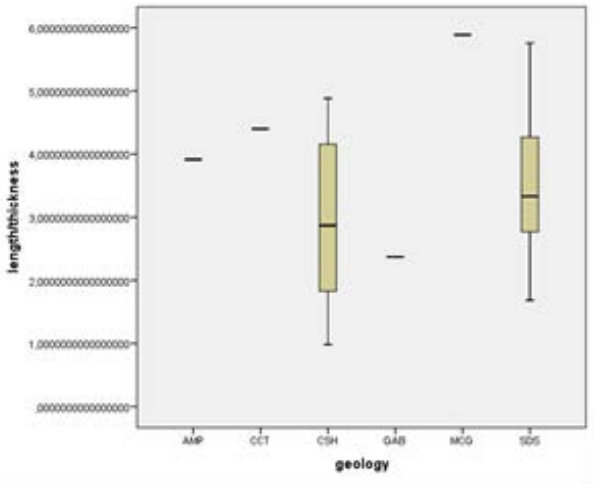


Fig.A 3.6. Percentiles distribution of relation length/thickness of the 50% to fully preserved objects according to geology; N= 35.

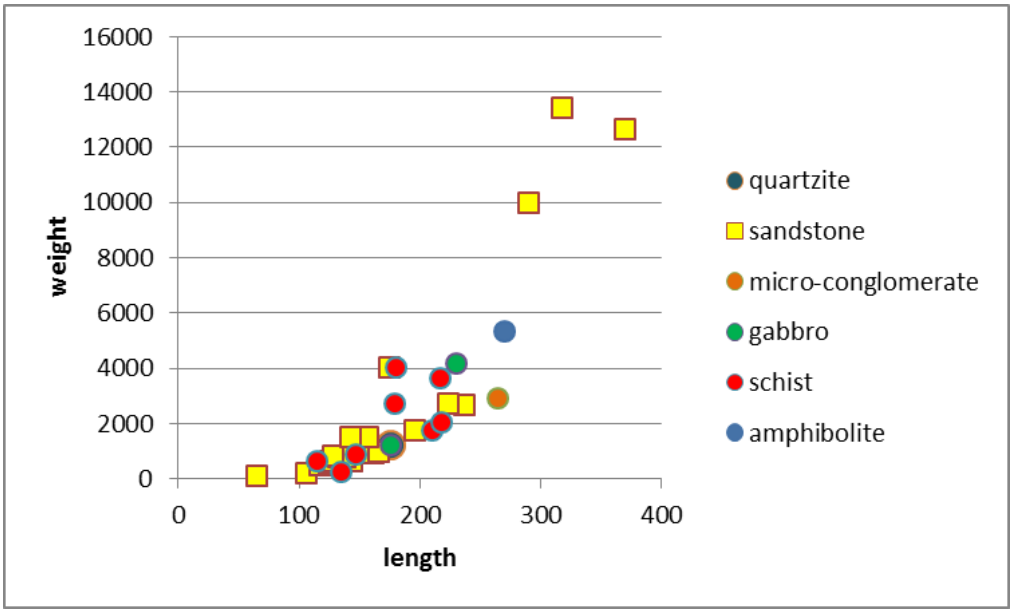


Fig. A 3.7. Abrasive slabs : correlation between length, weight and geology ; sandstone:R^2=0,5; schist: R^2 = 0,4644; N= 34.

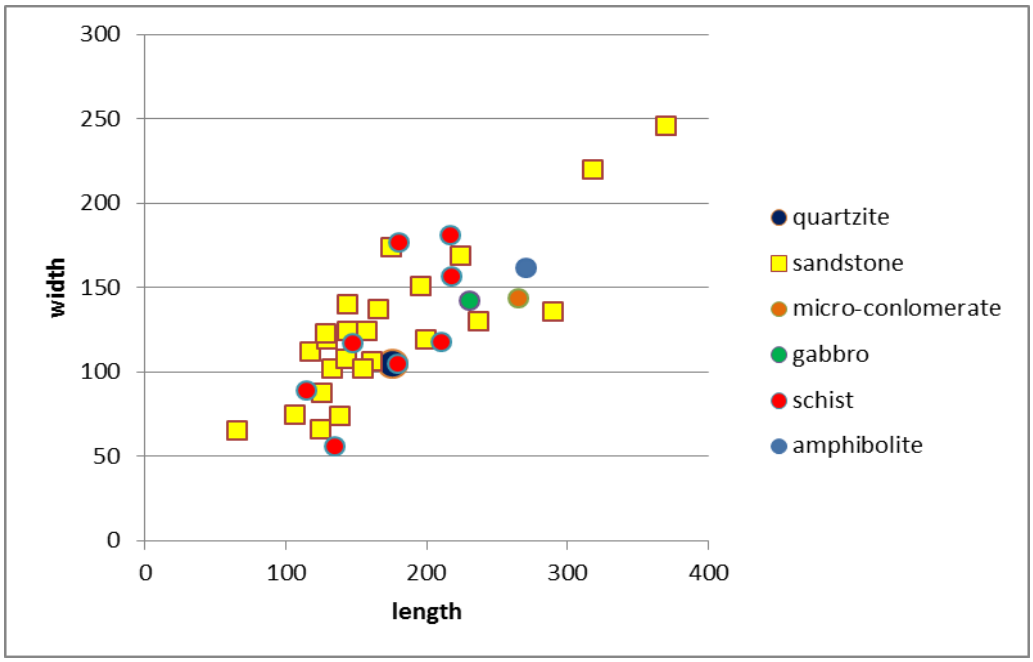


Fig.A 3.8. Abrasive slab: correlation between length, width and geology; sandstone: R^2 = 0,6311; shist: R^2 = 0,5242; N= 35.

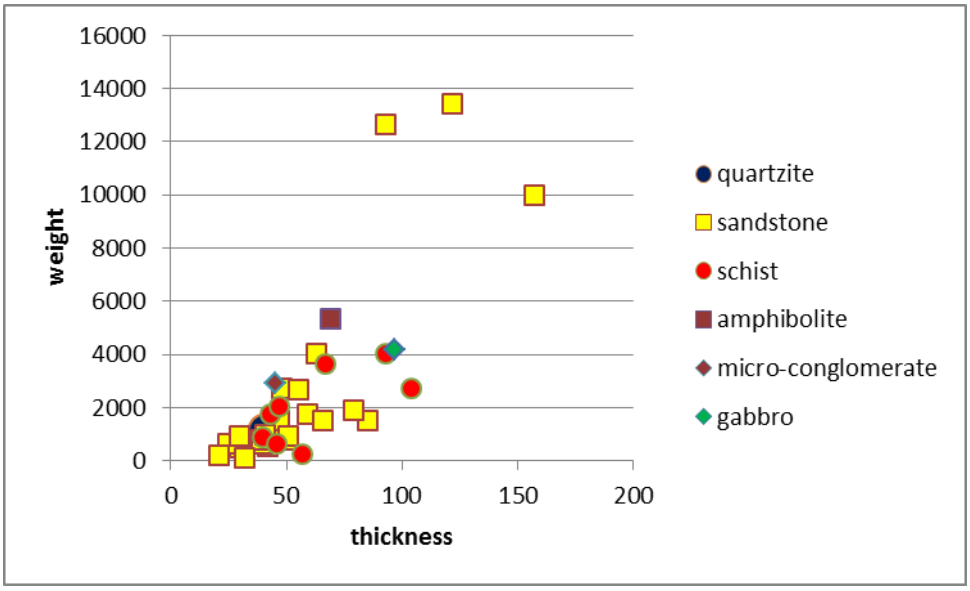


Fig.A 3.9. Abrasive slabs: correlation between thickness, weight and geology; sandstone:R^2= 0,5364; shist: R^2 =0,5124 ; N= 34.

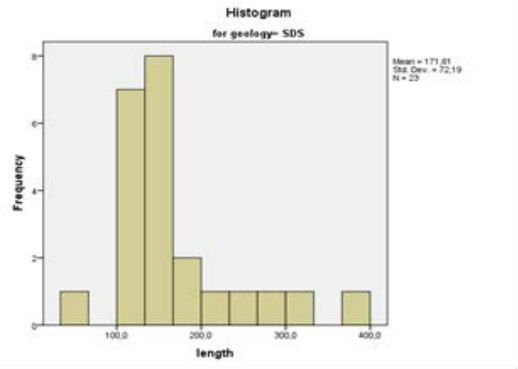


Fig.A 3.10. Relative frequency of the length of the sandstone tools; N= 23.

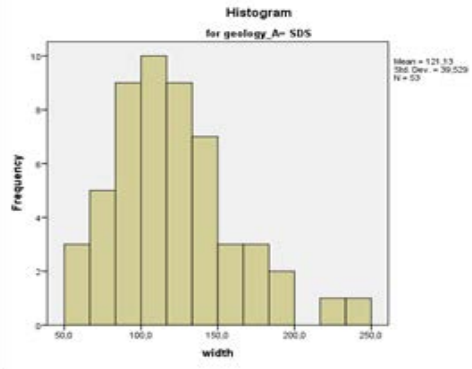


Fig.A 3.11. Relative frequency of the width of the sandstone tools; N= 53.

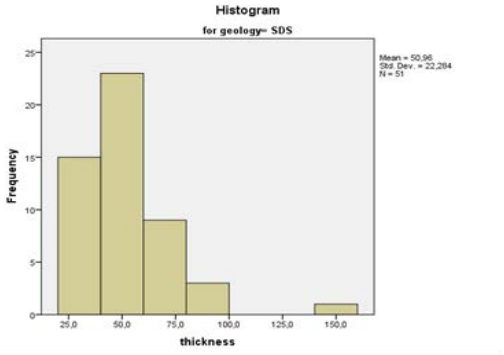


Fig. A 3.12. Relative frequency of the thickness of the sandstone tools; N= 53
.

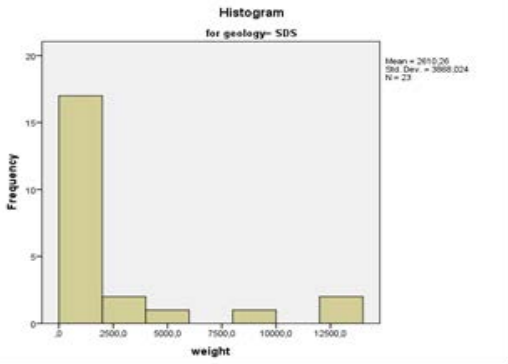


Fig.A 3.13. Relative frequency of the weight of the sandstone tools; N= 23.

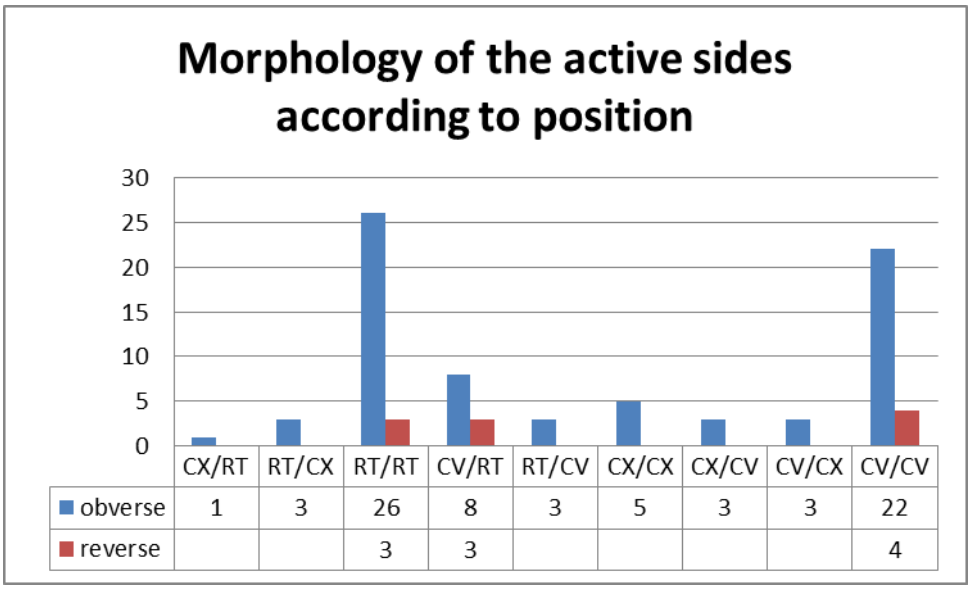


Fig. A 3.14. Abrasive slabs:morphology of the active sides according to position ; N= 84.

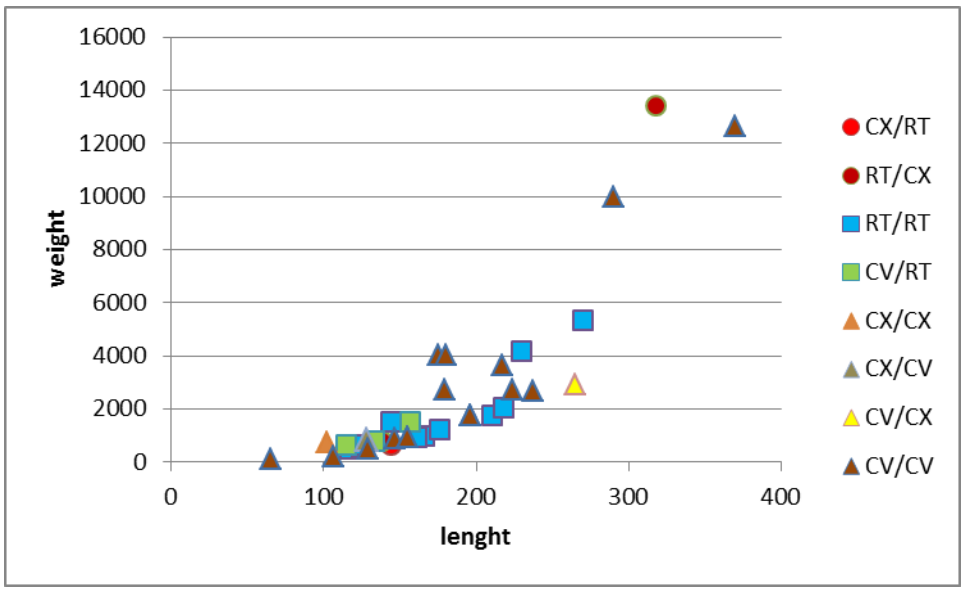


Fig. A 3.15. Abrasive slabs: correlation between length, weight and morphology; flat (RT/RT): R^2= 0,5119; concave (CV/CV): R^2= 0,5273; N= 37.

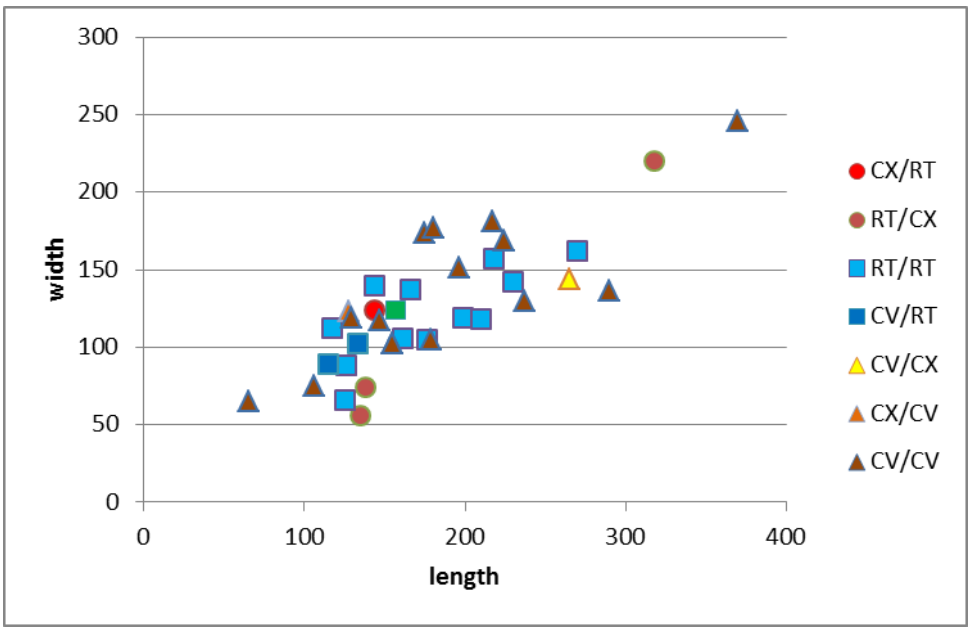


Fig. A 3.16. Abrasive slabs: correlation between length, width and morphology; flat (RT/RT): R^2= 0,3686; concave CV/CV: R^2= 0,6097; N= 37.

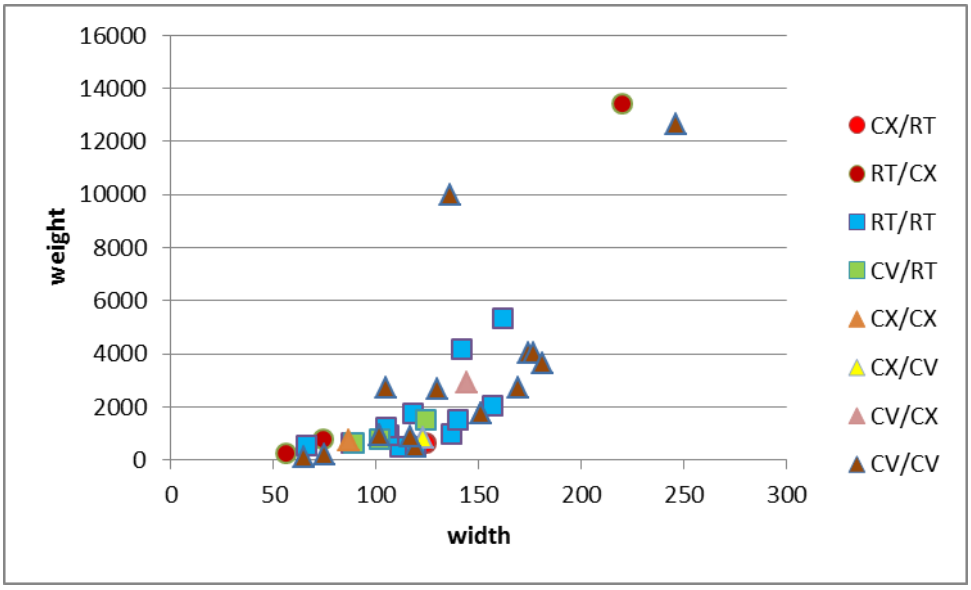


Fig. A 3.17. Abrasive slabs: correlation between length, width and morphology; N= 37.

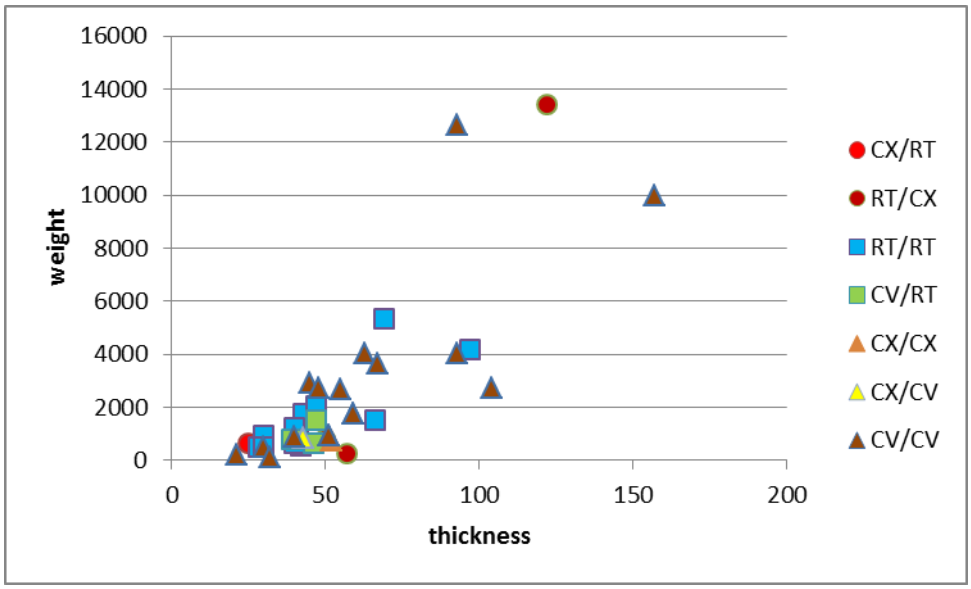


Fig. A 3.18. Abrasive slabs: correlation between thickness, weight and morphology; flat (RT/RT): R^2= -0,358; N= 37.

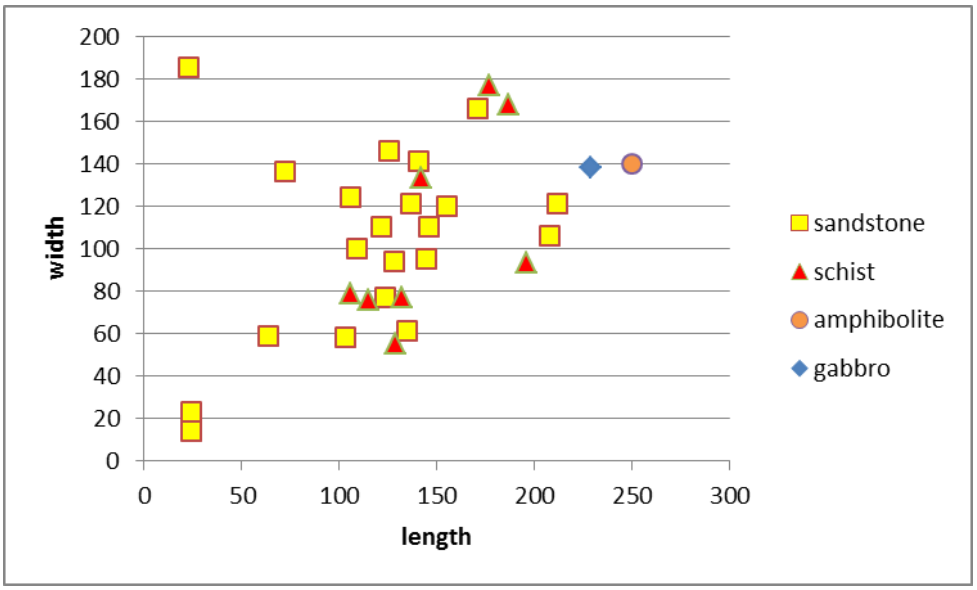


Fig. A 3.19. Abrasive slabs: correlation between size of the active surfaces and geology N= 31.

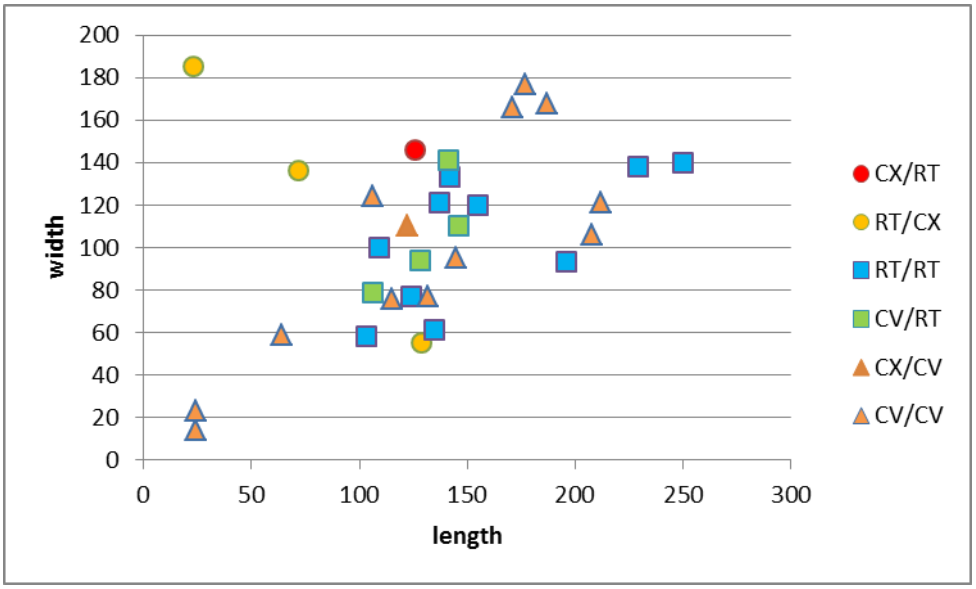


Fig. A 3.20. Abrasive slabs: correlation between the size of the active surfaces and morphology; N= 31.

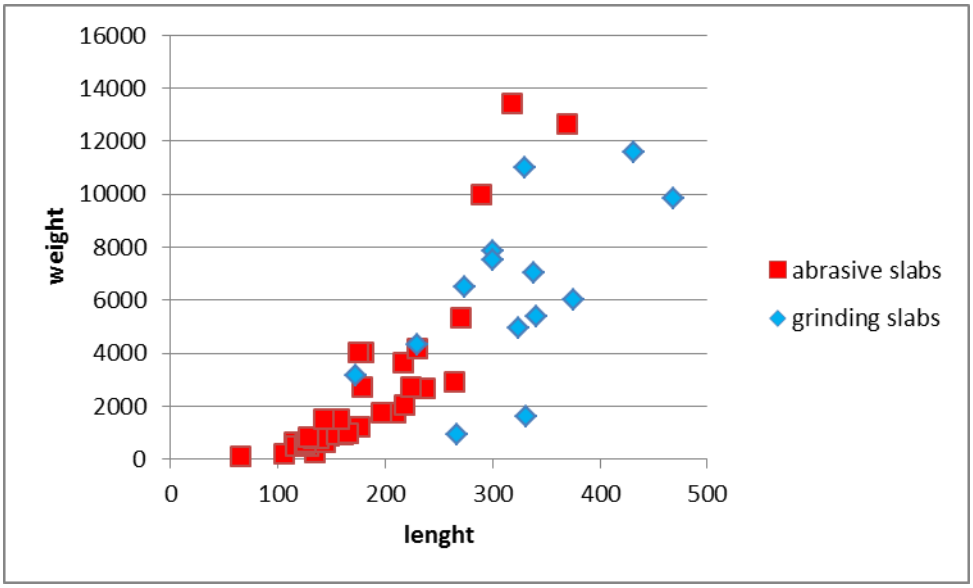


Fig. A 3.21. Correlations between length and weight of abrasive slabs and grinding slabs; N=48.

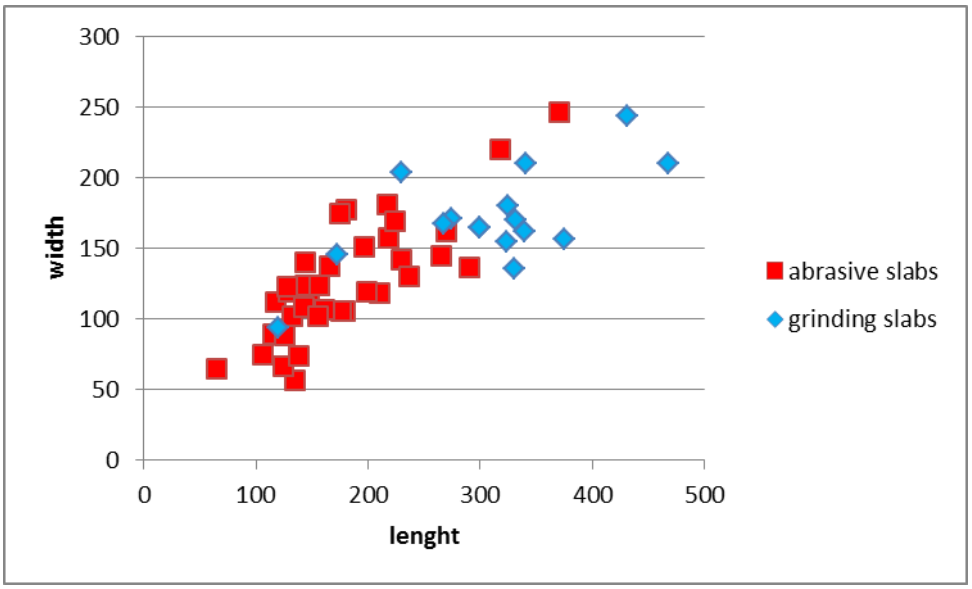


Fig. A 3.22. Correlations between length and width of abrasive slabs and grinding slabs; N=48.

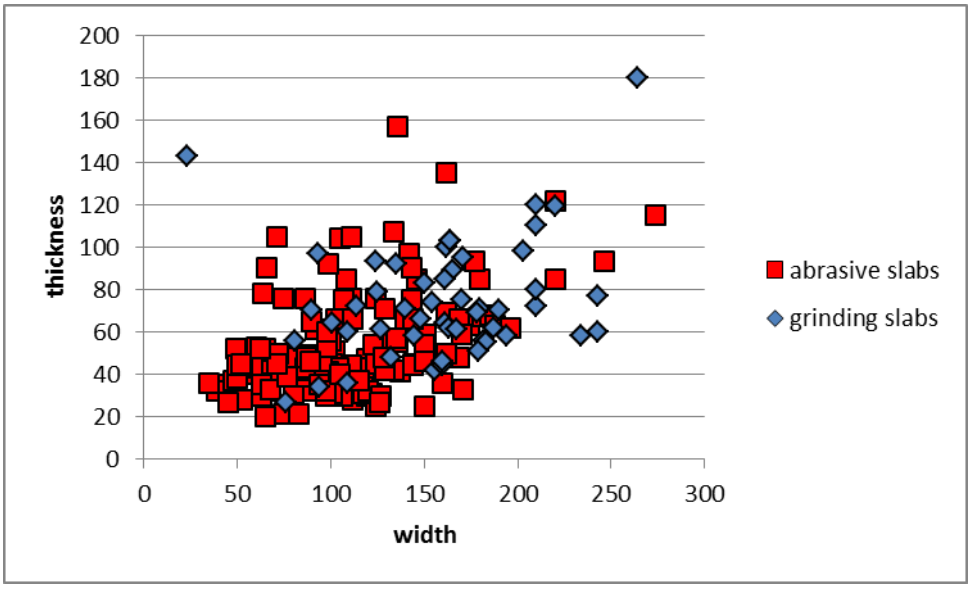


Fig. A 3.23. Correlations between width and thickness of abrasive slabs and grinding slabs; N= 196.

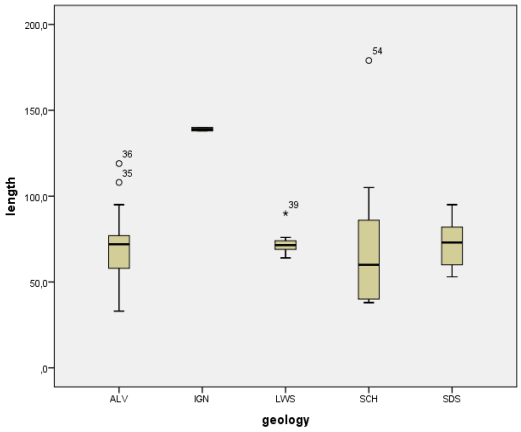


Fig. A 4.1. Percentiles distribution of the length of the fully preserved axes according to geology; N= 67.

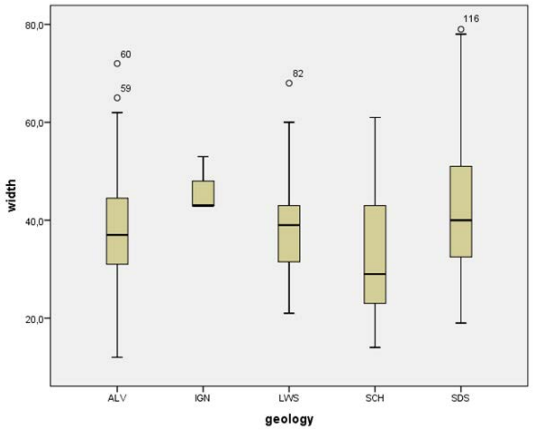


Fig. A 4.2. Percentiles distribution of the width of the 50% to fully preserved axes according to geology; N= 116.

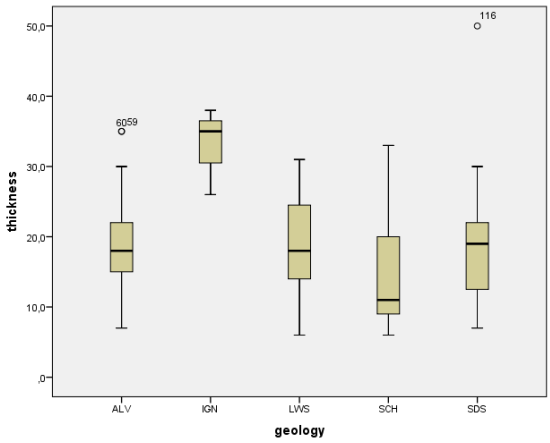


Fig.A 4.3. Percentiles distribution of the thickness of the 50% to fully preserved axes according to geology; N= 116.

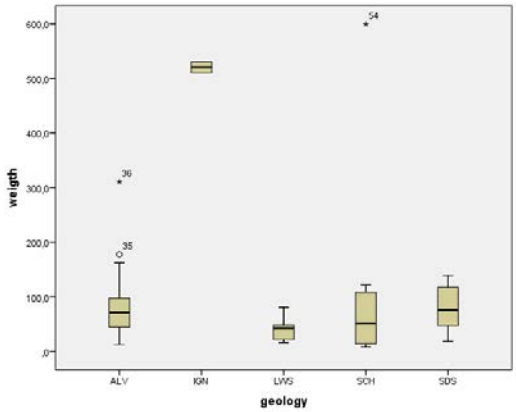


Fig. A 4.4. Percentiles distribution of the weight of the fully preserved axes according to geology; N= 67.

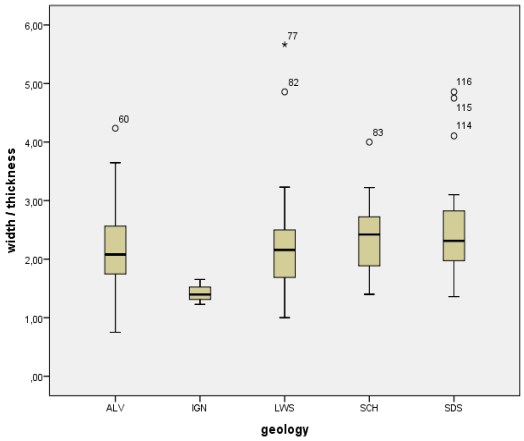


Fig.A 4.5. Percentiles distribution of the relation width/thickness of the 50% to fully preserved axes according to geology; N= 116.

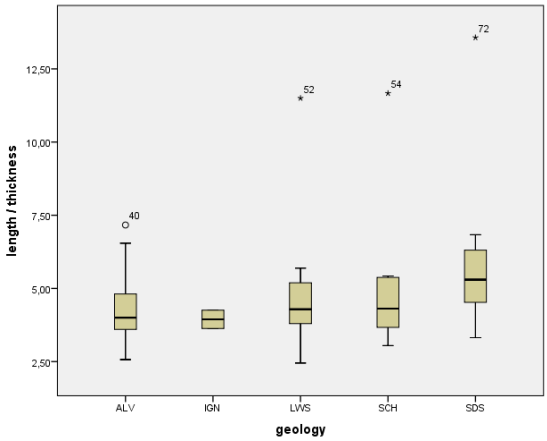


Fig.A 4.6. Percentiles distribution of the relation length/thickness of the fully preserved axes according to geology; N= 67.

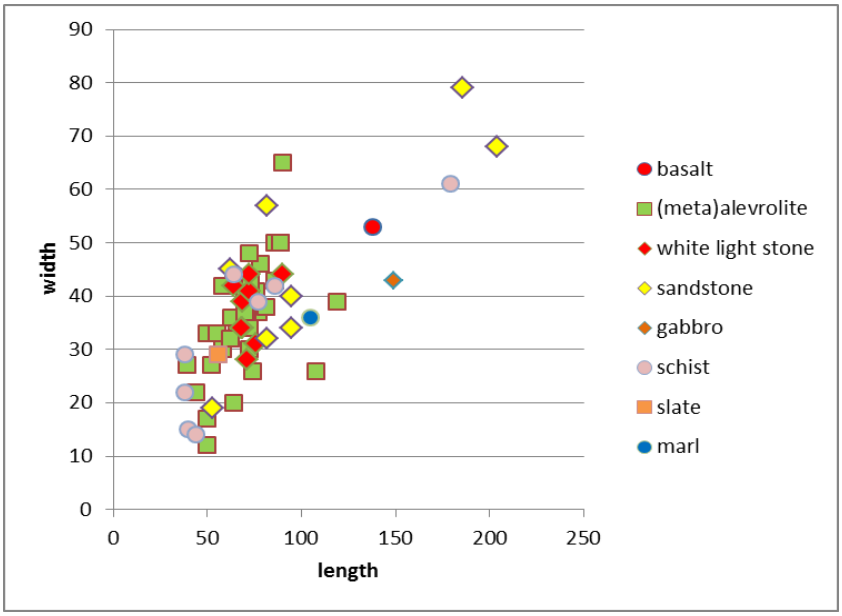


Fig.A 4.7. Axes: correlation between length, width and geology; (meta)alevrolite: R^2= 0,2029; light white stone R^2= -0,106; sandstone:

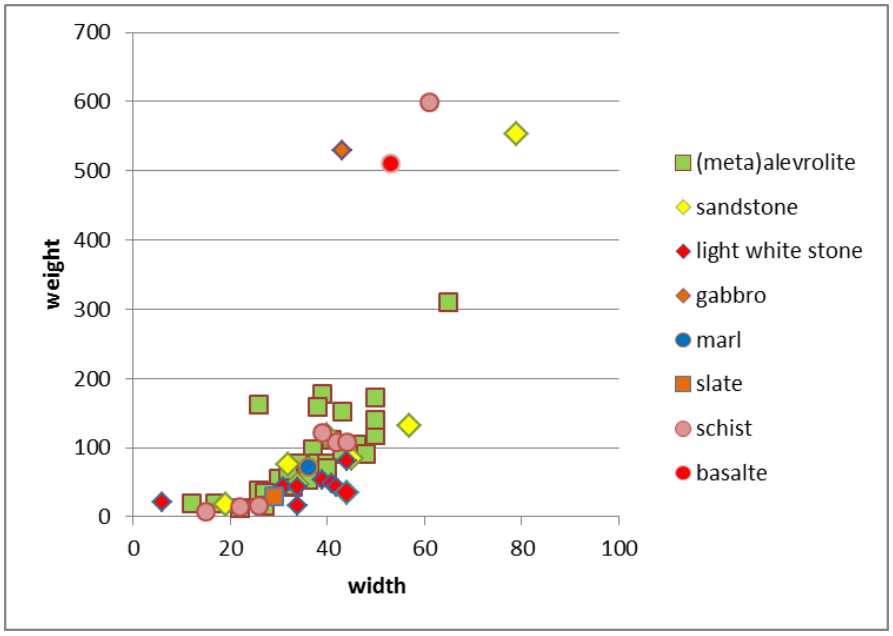


Fig..A 4.8. Axes: correlation between width, weight and geology; (meta)alevrolite: R^2= 0,4683; light white stone R^2=0,2138; sandstone: R^2=0,552; schst: R^2= 0,4592; N= 67.

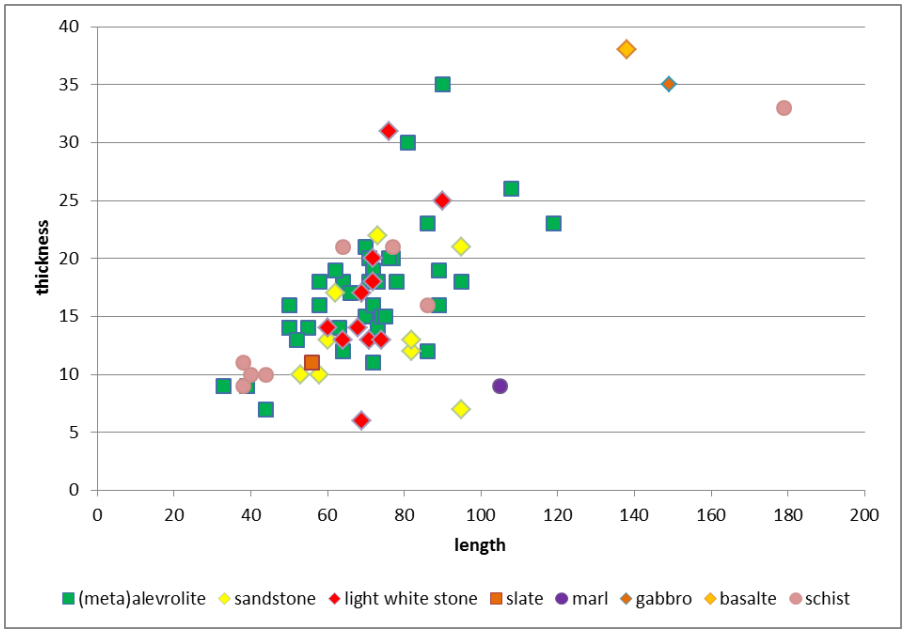


Fig. A 4.9. Axes: correlation between length, thickness and geology; (meta)alevrolite: R^2=0,3913; N= 67.

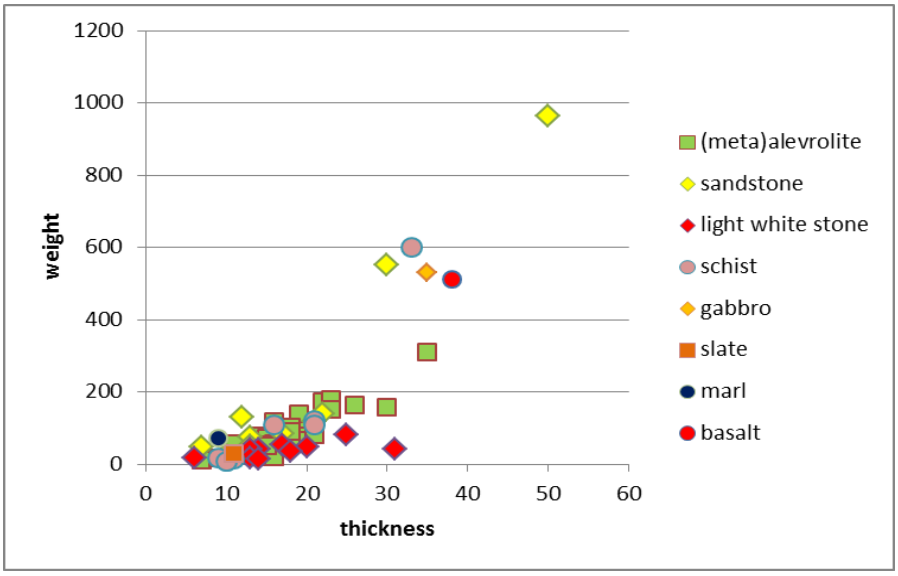


Fig.A 4.10. Axes: correlation between thickness, weight and geology; (meta)alevrolite: R^2=0,6106; light white stone R^2=0,3973; sandstone: R^2= 0,7322; N= 67.

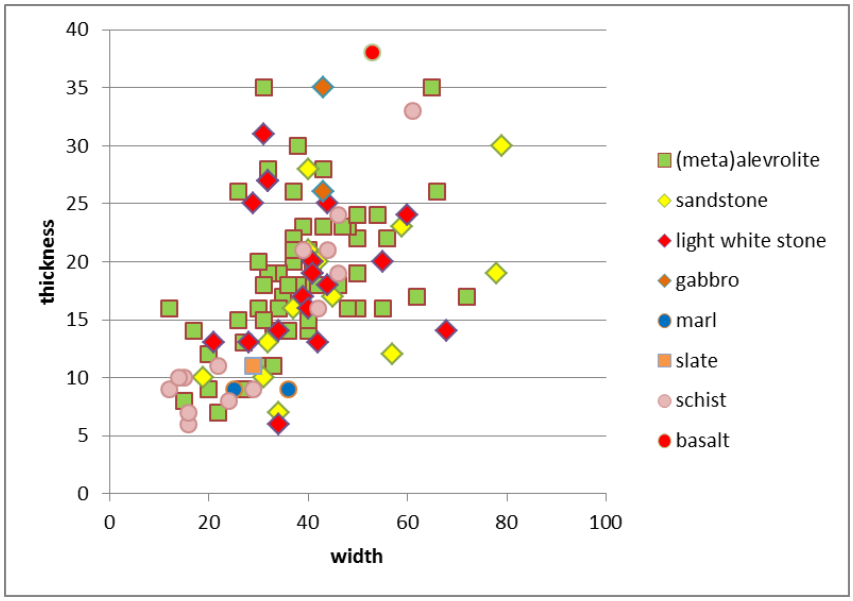


Fig.A 4.11. Axes: correlation between width, thickness and geology; light white stone R^2= - 0,726; sandstone: R^2= 0,1977 N= 116.

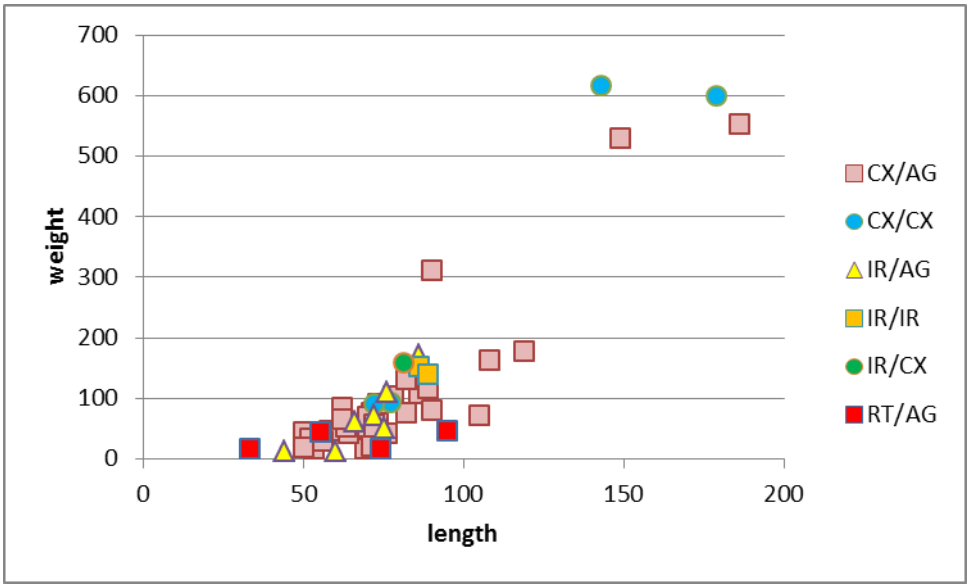


Fig..A 4.12. Axes: correlation between length, weight and morphology; CX/AG: R^2= 0,4632; IR/AG: R^2= 0,306; N= 66.

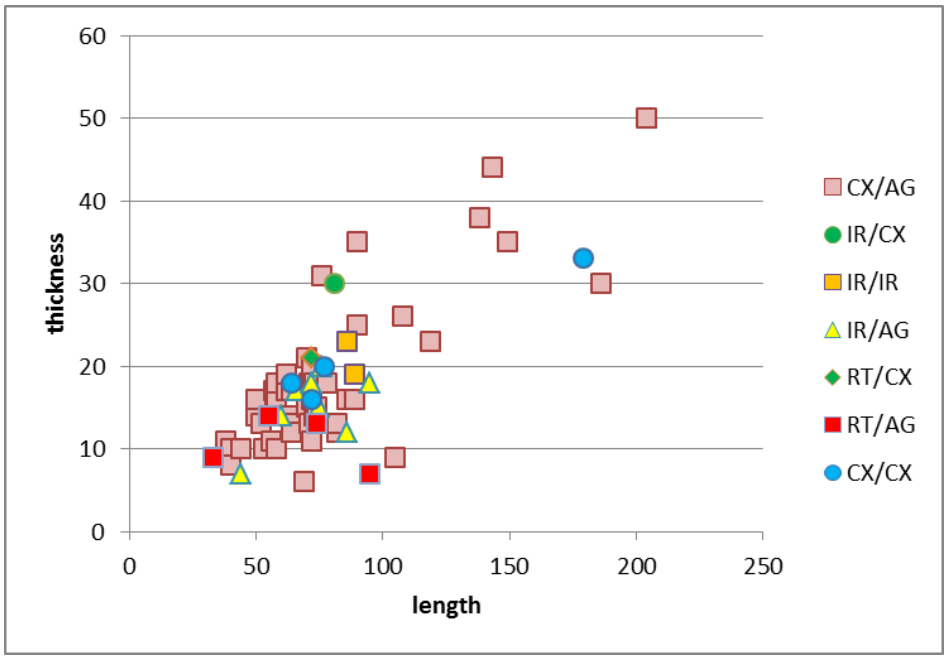


Fig..A 4.13. Axes: correlation between length, thickness and morphology; CX/AG: R^2=0,6614; N= 67.

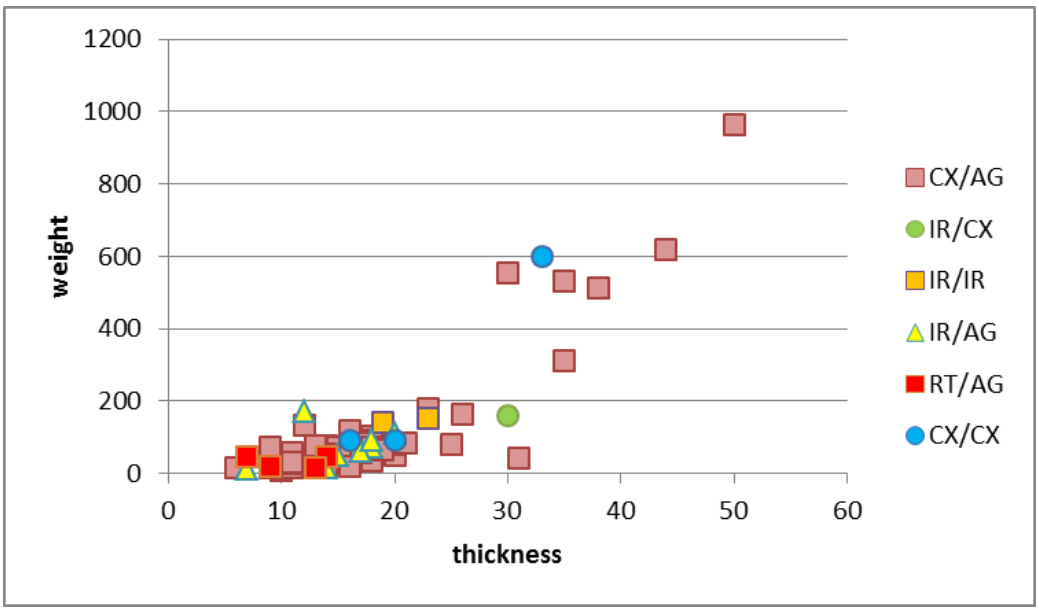


Fig..A 4.14. Axes: correlation between thickness, weight and morphology; CX/AG: R^2=0,5263; N= 66.

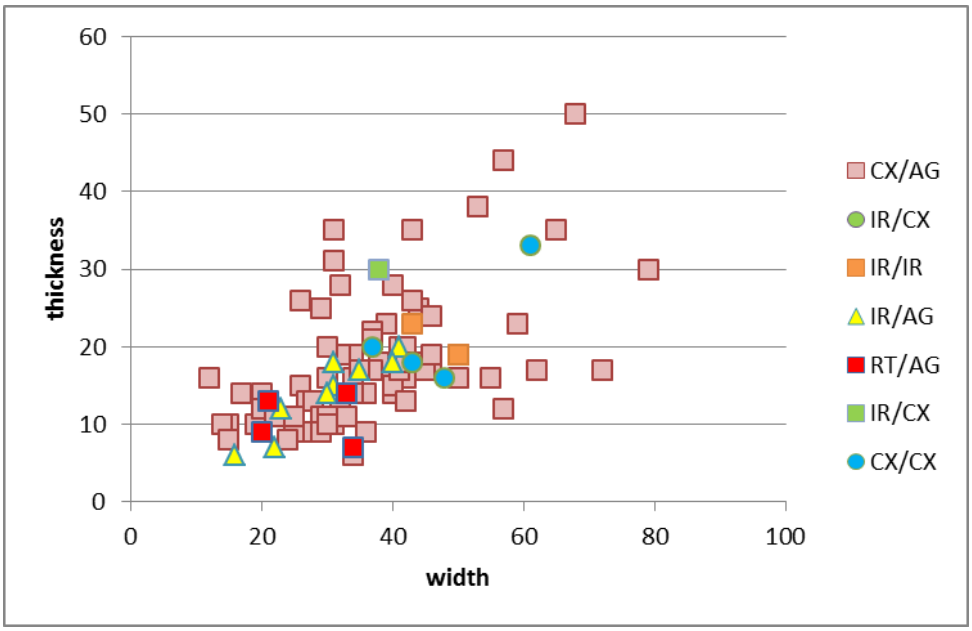


Fig.A 4.15. Axes: correlation between width, thickness and morphology; CX/AG: R^2=0,2558; IR/AG: R^2= 0,8571; N= 67.

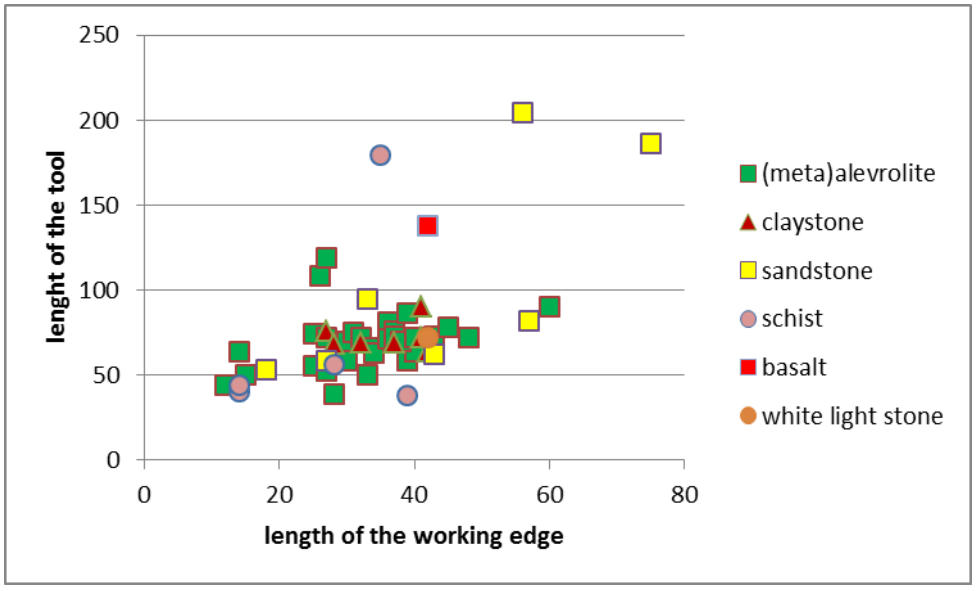


Fig.A 4.16. Axes: correlation between length of the working edge, lenght of the tool and geology;(meta)alevrolite: R^2= - 0,716; N=53.

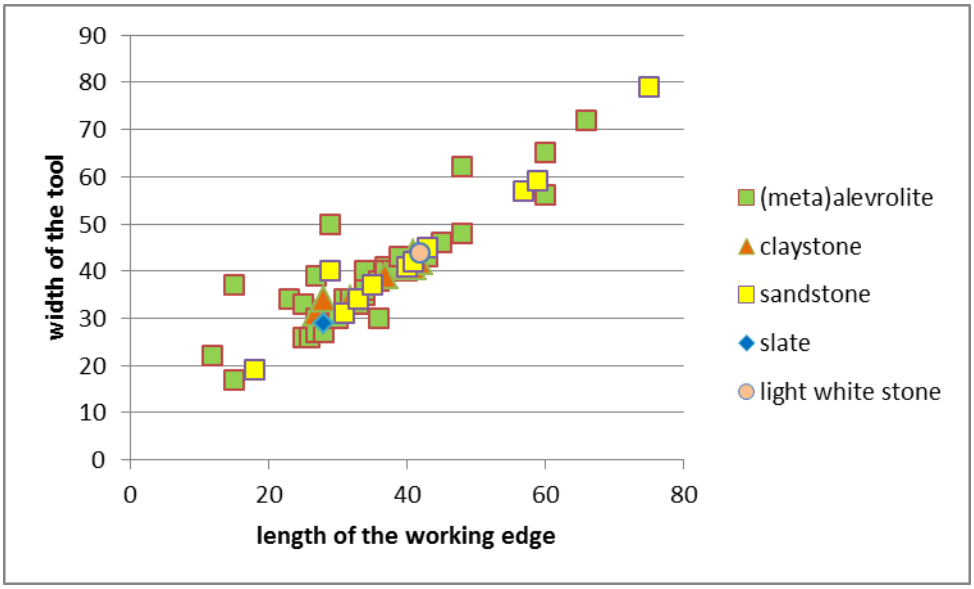


Fig.A 4.17. Axes: correlation between length of the working edge, width of the tool and geology; schist R^2=0,3495;(meta)alevrolite: R^2=0,7257; sandstone: R^2=0,9001; N= 75.

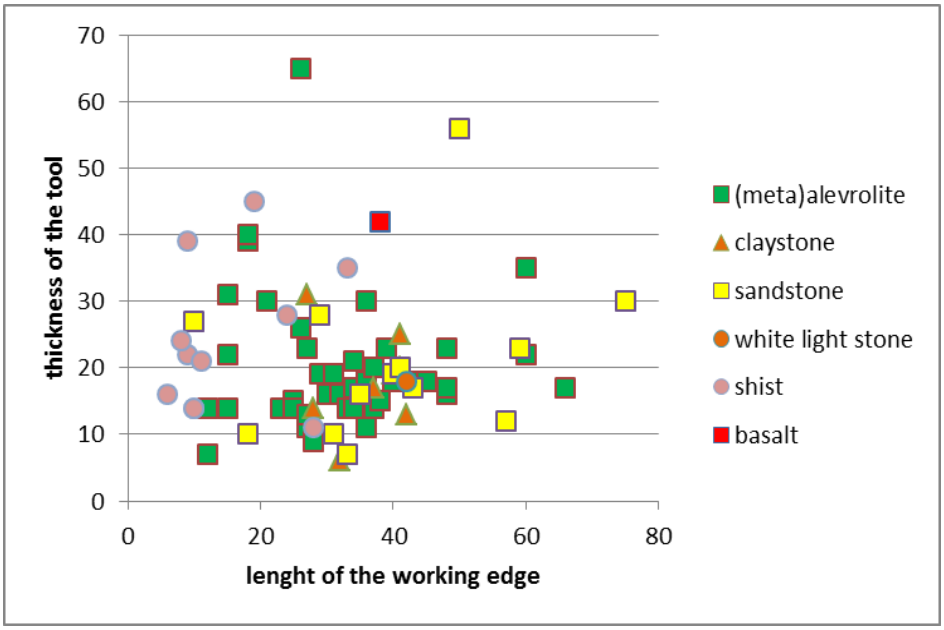


Fig.A 4.18. Axes: correlation between length of the working edge, width of the tool and geology; N= 75.

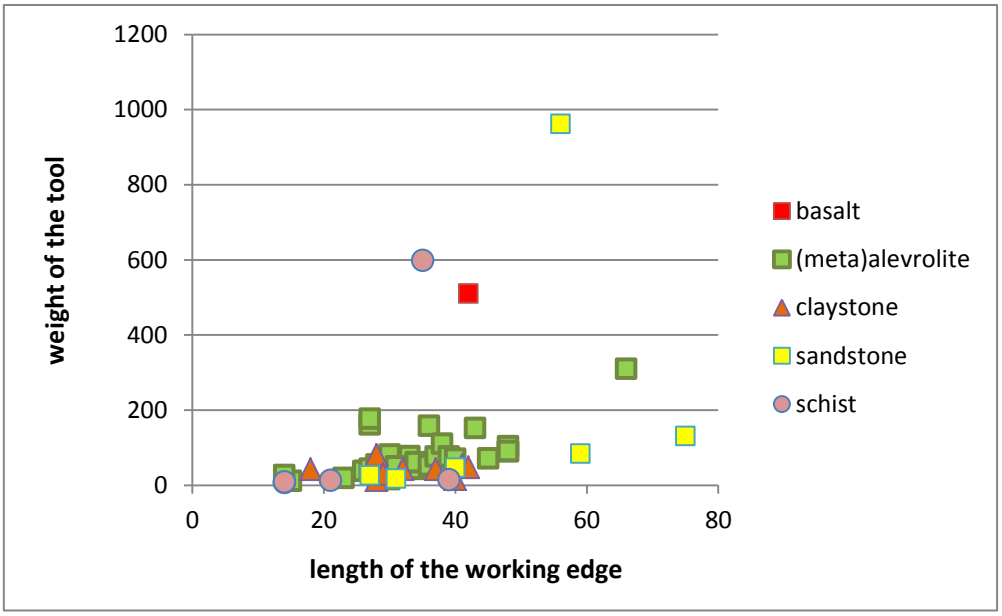


Fig.A 4.19. Axes: correlation between length of the working edge, weight of the tool and geology; (meta)alevrolite: R^2= 0,03558;sandstone: R^2= 0,0932; N= 53.

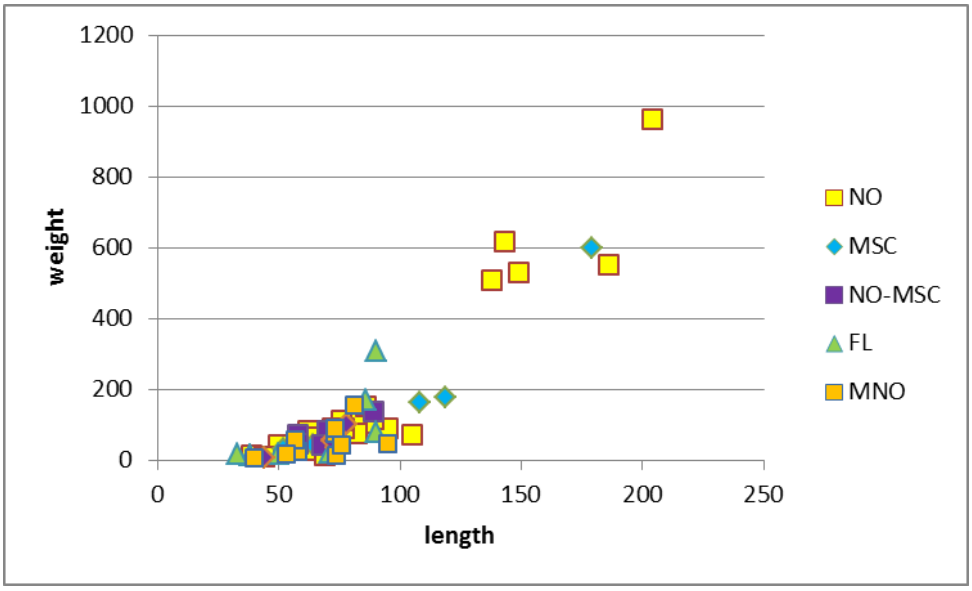


Fig..A 4.20. Axes: correlation between length, weight and use traces; flake negatives (NO): R^2= 0,5713; micro-scratches (MSC): R^2= 0,8163; flake negatives-micro-scratches(NO-MSC): R^2= 0,4963; N= 67.

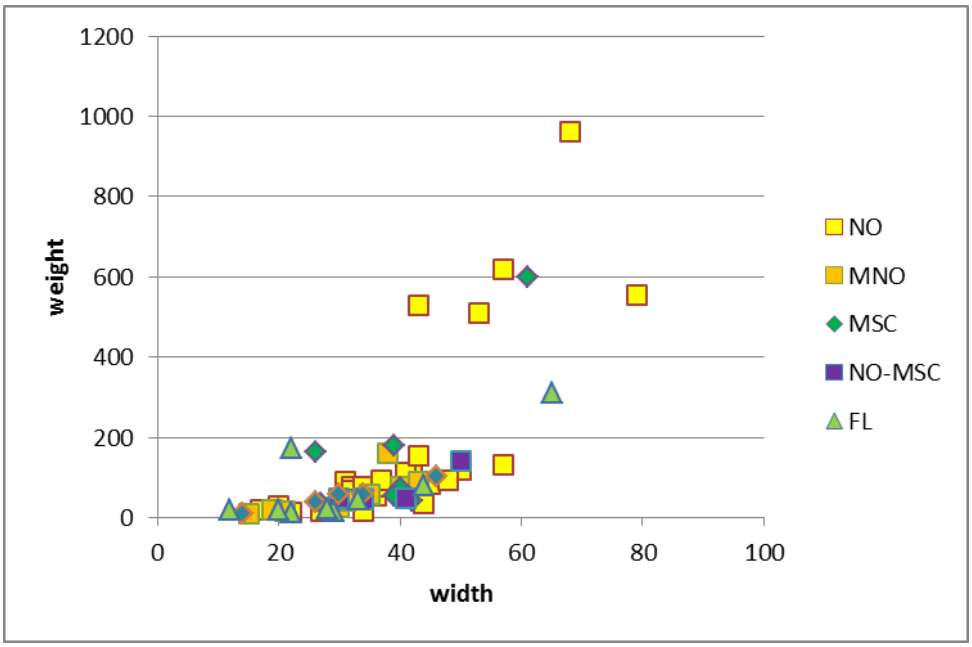


Fig..A 4.21. Axes: correlation between width, weight and use traces; flake negatives (NO): R^2=0,3263; micro-scratches (MSC): R^2= 0,3102; flake negatives-micro-scratches(NO-MSC): R^2= 0,4781; N= 67.

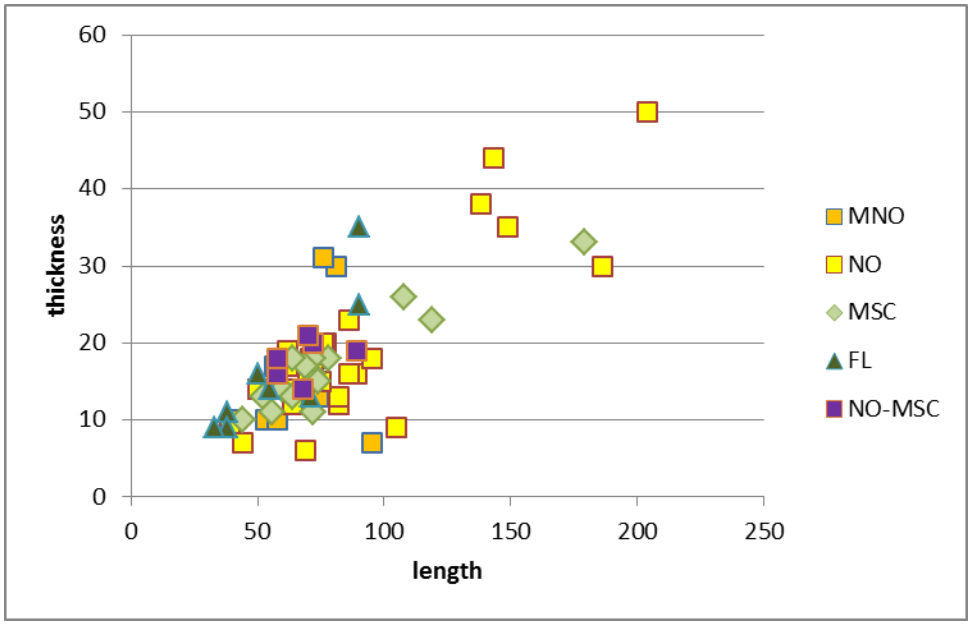


Fig..A 4.22. Axes: correlation between length, thickness and use traces; micro-scratches (MSC): R^2= 0,8165; flake negatives-micro-scratches(NO-MSC): R^2= -0,445; N= 67.

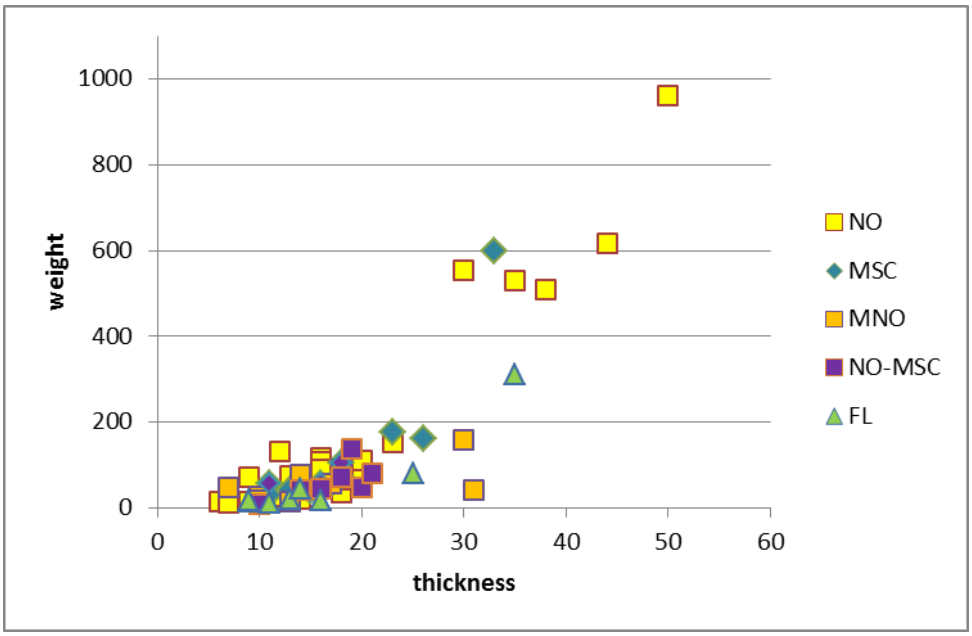


Fig..A 4.23. Axes: correlation between length, thickness and use traces; flake negatives (NO): R²=0,6482; micro-scratches (MSC): R²= 0,4512; flake negatives-micro-scratches(NO-MSC): R²= 0,3613; working edge without use traces (FL): R²= 0,5894; micro-flake negatives (MNO): R²= 0,3992; N= 67.

Use traces /N	Mean length	Standard deviation	Max length	Mean weight
alevrolite / 35	35	11	68	15
light white stone/ 9	36	5	42	28
sandstone / 11	44	14	75	29
slate/ 1	-	-	18	-

Table A 4.1. Axes: length of the working surfaces according to geology; N= 56.

Use traces /N	Mean length	Standard deviation	Max length	Mean weight
FL / 3	42	17	60	25
MGA/1	-	-	41	-
MNO /7	33	8	43	18
MSC / 12	33	8	48	25
NO /24	36	14	75	12
NO-MSC /3	29	1	30	28

Table A 4.2.Axes: length of the working surfaces according to use traces; N=40 .

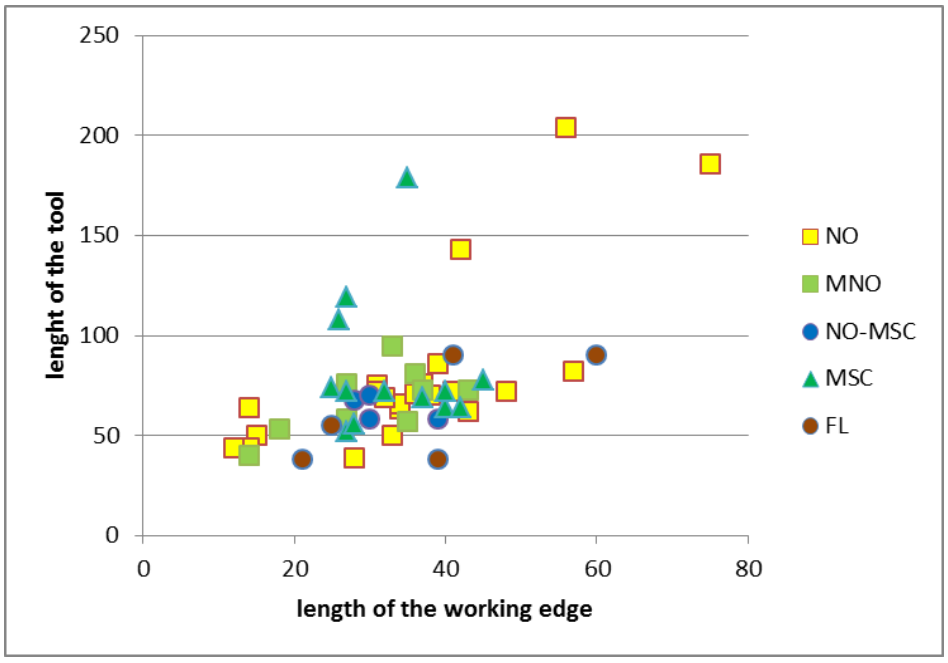


Fig.A 4.25. Axes: correlation between length of the working edge and lenghth of the tool and use traces;

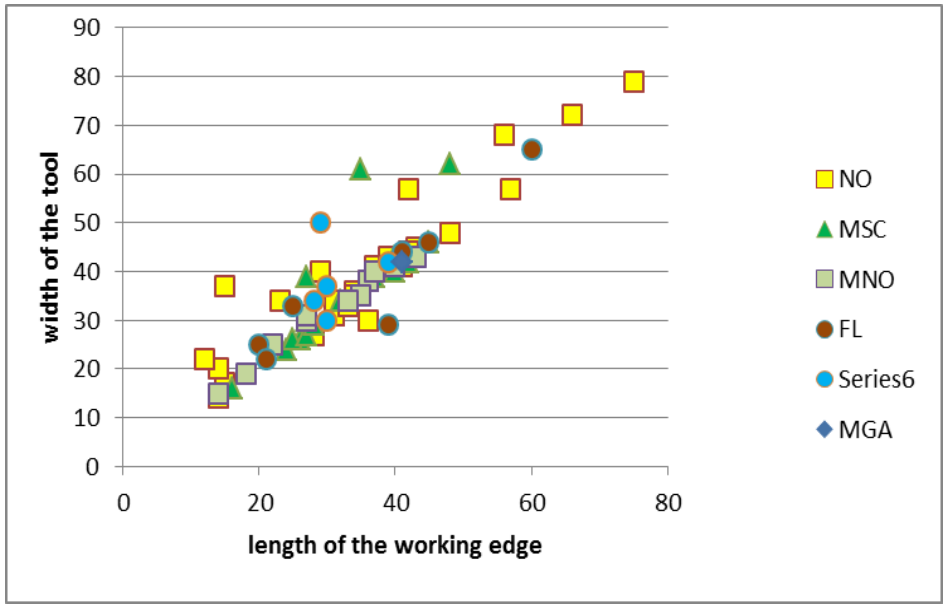


Fig.A 4.26. Axes: correlation between length of the working edge and width of the tool and use traces; flake negatives (NO): 0,8097; micro-scrathes (MSC): 0,8018; microflake negatives (MNO): 0,9648; N= 40.

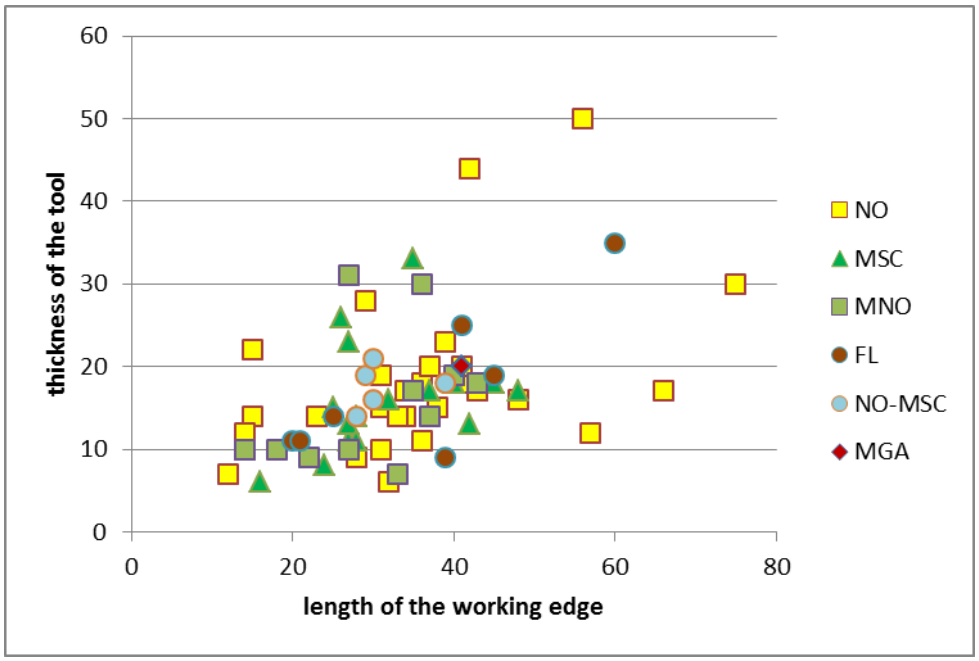


Fig.A 4.27. Axes: correlation between length of the working edge thickness of the tool and use traces; N= 40.

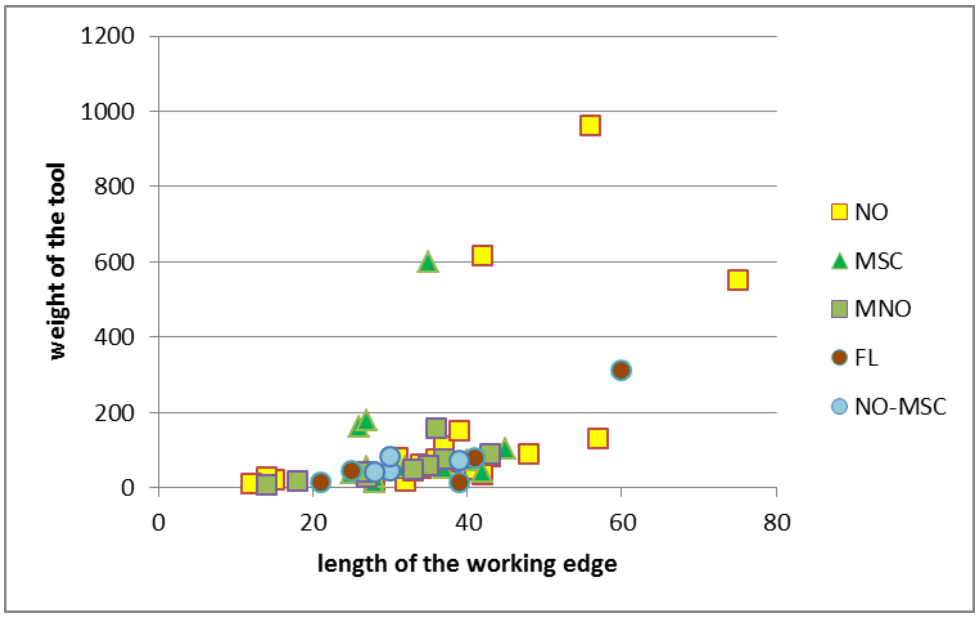


Fig.A 4.28. Axes: correlation between length of the working edge, width of the tool and use traces; flake negatives (NO): 0,3996; microflake negatives (MNO): 0,3789; N= 39.

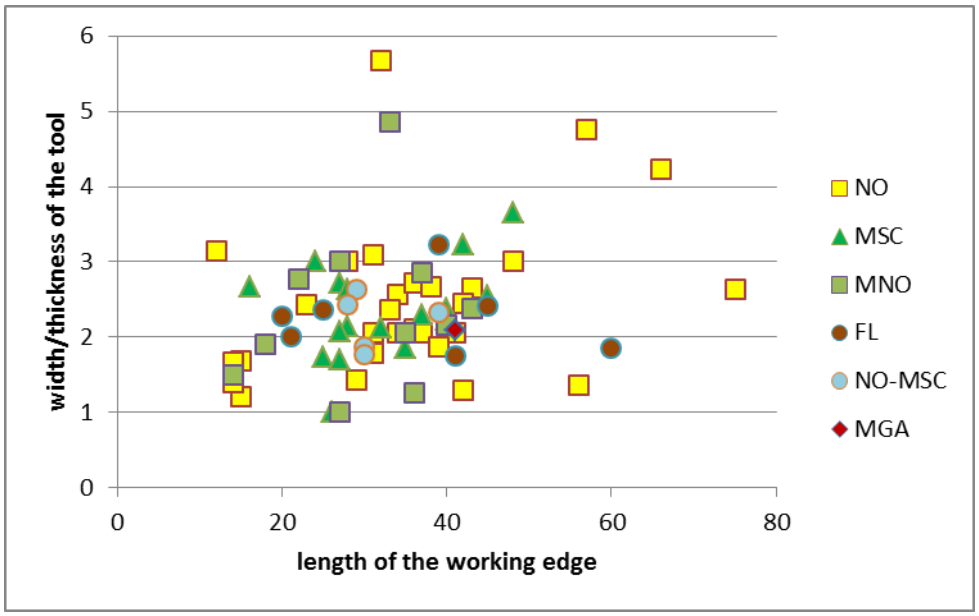


Fig.A 4.29. Axes: correlation between length of the working edge, width/ thickness of the tool and use traces; N= 40.

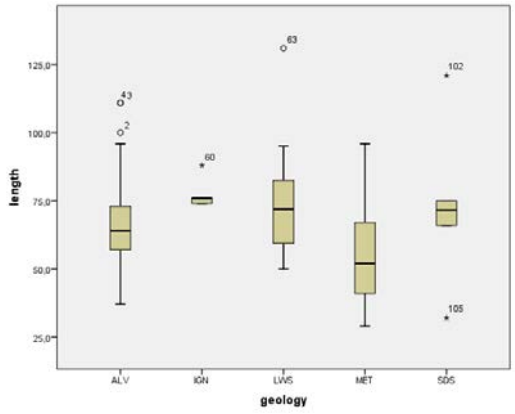


Fig.A 4.30. Percentiles distribution of the length of the fully preserved celts according to geology; N= 104.

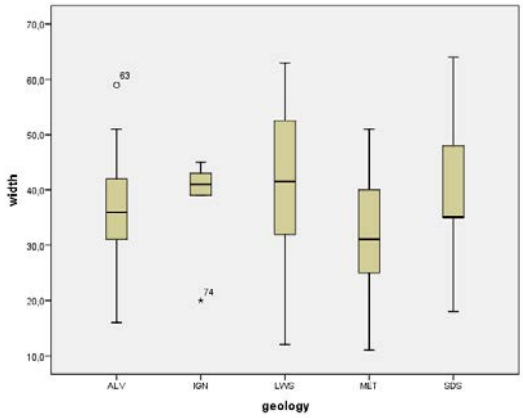


Fig.A 4.31. Percentiles distribution of the width of 50% to the fully preserved celts according to geology; N= 131.

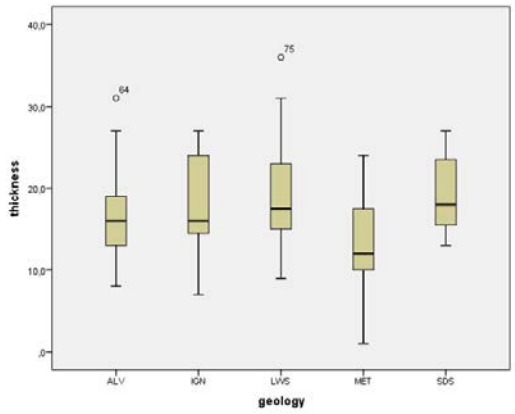


Fig.A 4.32. Percentiles distribution of the thickness of 50% to the fully preserved celts according to geology; N= 131.

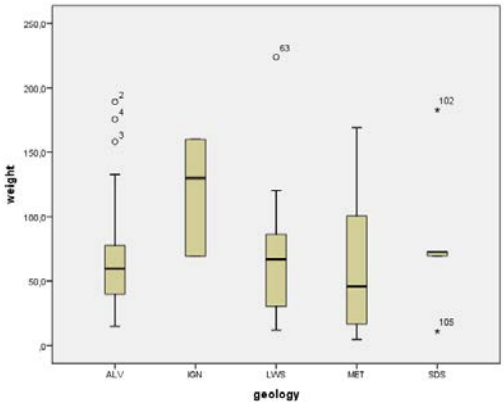


Fig.A 4.33. Percentiles distribution of the weight of the fully preserved celts according to geology; N= 100.

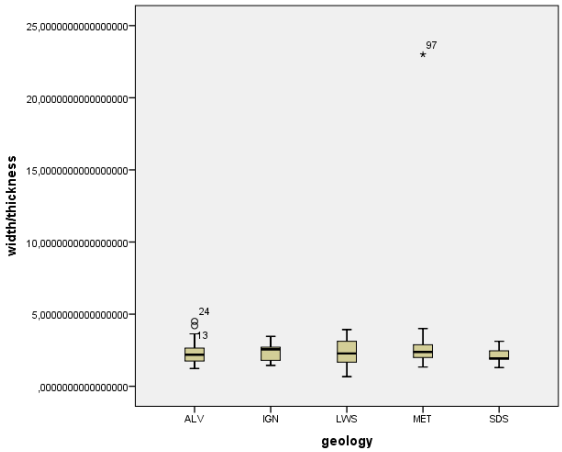


Fig. A 4.34. Percentiles distribution of the relation width/ thickness of 50% to the fully preserved celts according to geology; N= 131.

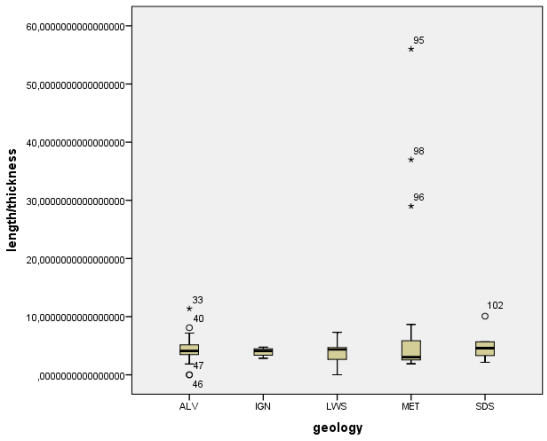


Fig.A 4.35. Percentiles distribution of the relation length/ thickness of 50% to the fully preserved celts according to geology; N= 104.

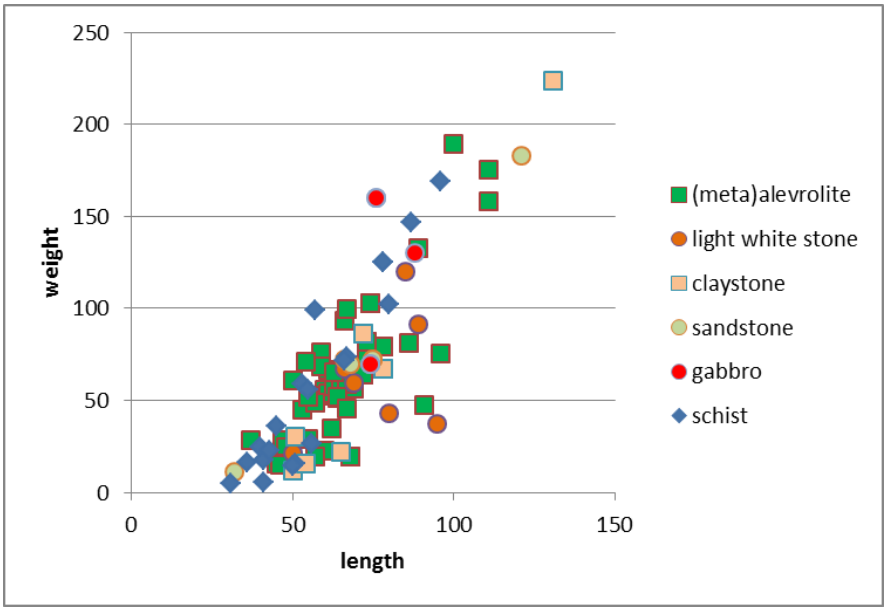


Fig. A 4.36. Celts: correlation between length, weight and geology; (meta)alevrolite: R^2= 0,4842; schist R^2= 0,5962; claystone: R^2= - 0,5922; light white stone R^2=0,1851; N= 100.

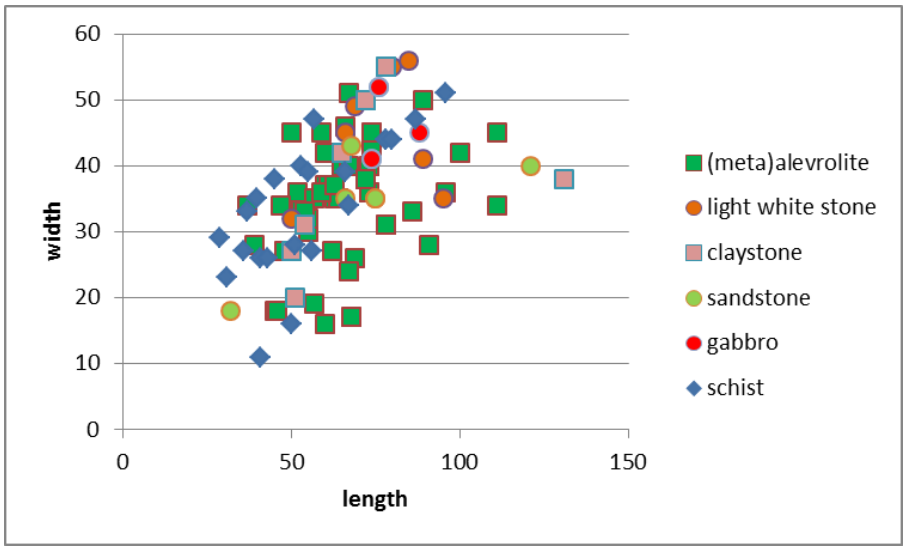


Fig. A 4.37. Celt:s: correlation between length, width and geology; schist R^2= 0,398; claystone: R^2= - 0,348; light white stone R^2=0,471; N= 104.

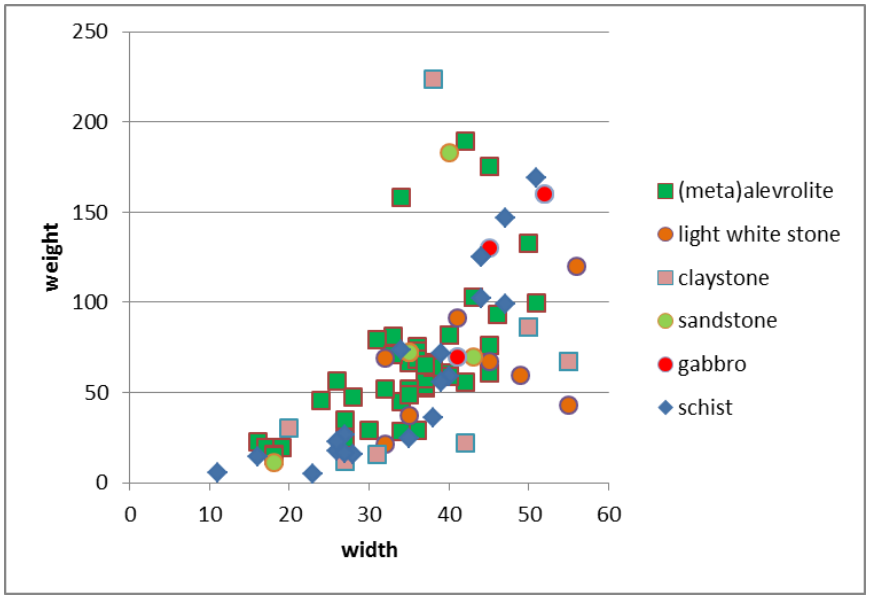


Fig. A 4.38. Celts: correlation between width, weight and geology; (meta)alevrolite: R^2= 0,5362; schist: R^2= 0,5273; light white stone R^2= 0,228; N= 100.

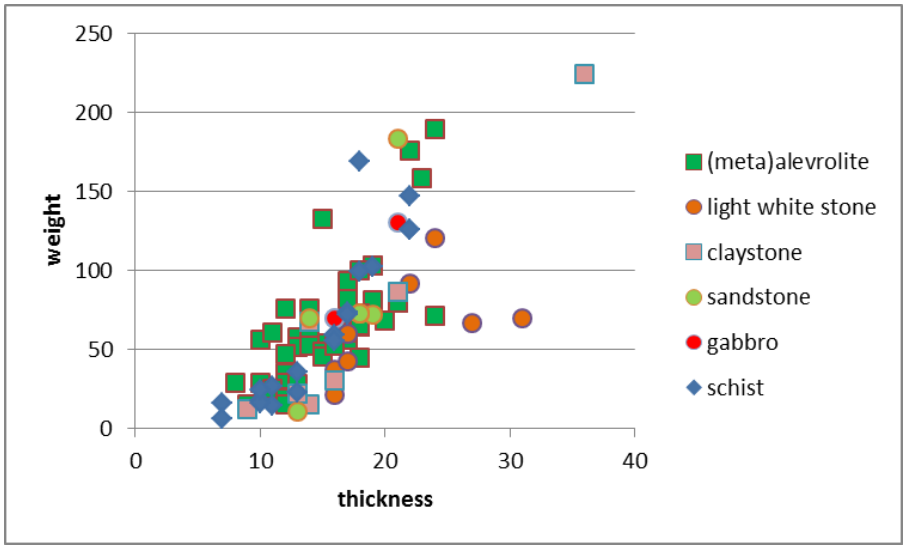


Fig. A 4.39. Celts: correlation between thickness, weight and geology ;(meta)alevrolite: R^2= 0,46; schist: R^2= 0,6012; light white stone R^2= 0,3259; claystone: R^2= 0,7055, sandstone R^2=0,3537; N= 100.

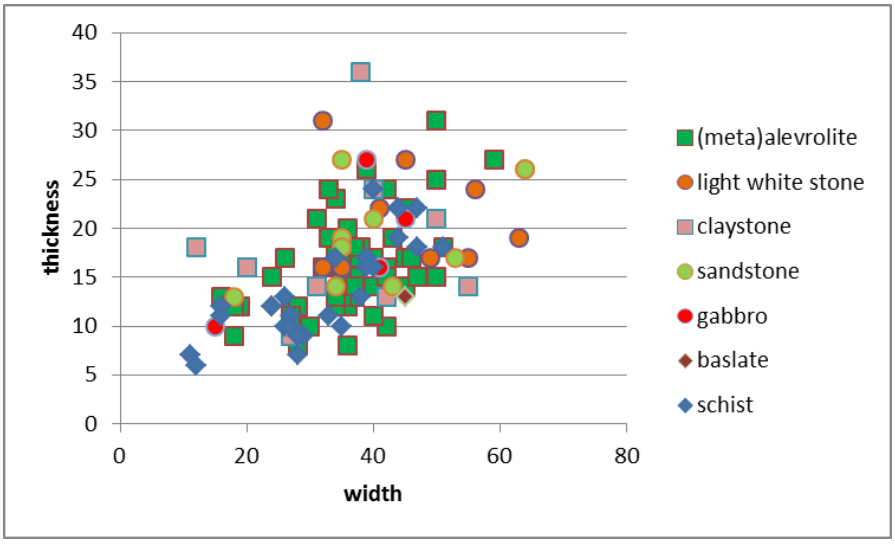


Fig.A 4.40. Celts: correlation of between width, thickness and geology ; schist: R^2=0,6278; N= 128.

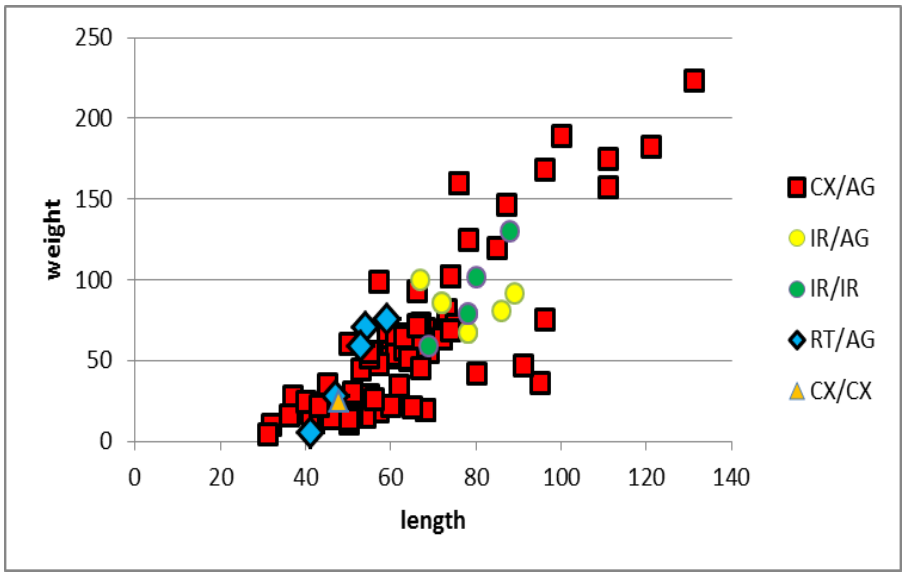


Fig.A 4.41. Celt:s: correlation between length, weight and morphology of the working edge; CX/AG, R^2=0,5013; RT/AG: R^2=0,3899; IR/IR, R^2=0,472; N= 94.

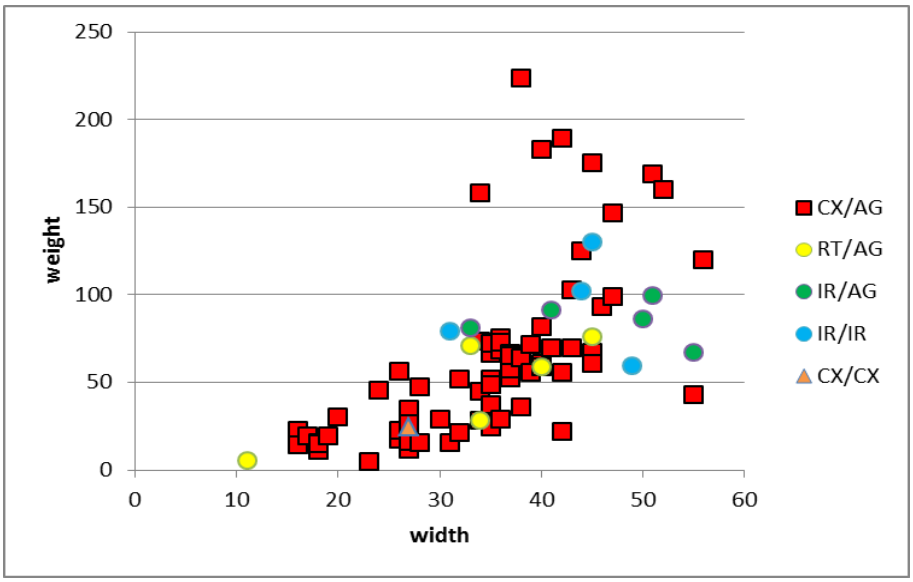


Fig. A 4. 42. Celts: correlation between width, weight and morphology of the working edge; CX/AG, R^2= 0,3239; N= 94.

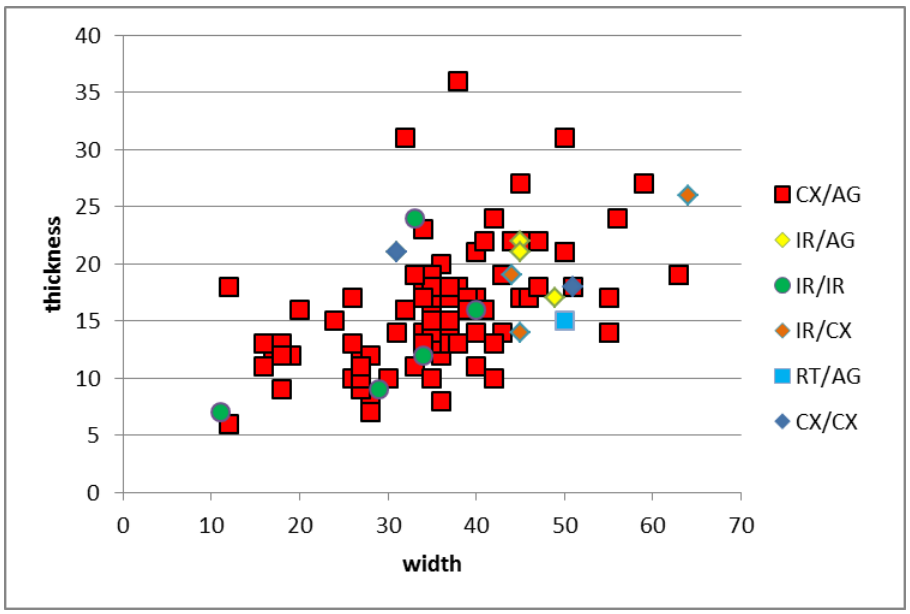


Fig. A 4.43. Celt:s: correlation between width, thickness and morphology of the working edge; N= 109.

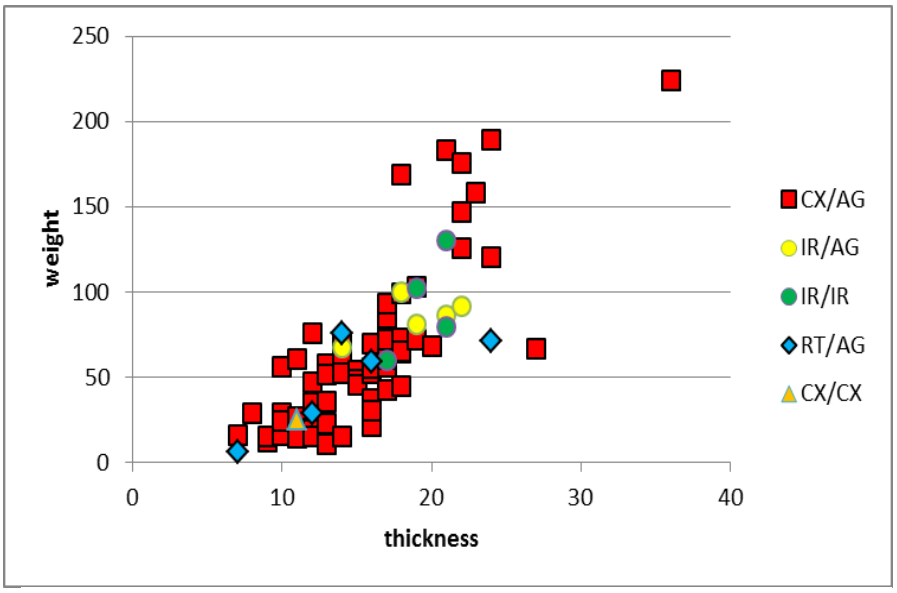


Fig. A.4.44. Celt:s: correlation between thickness, weight and morphology of the working edge; CX/AG, R²=0,5109; N= 94.

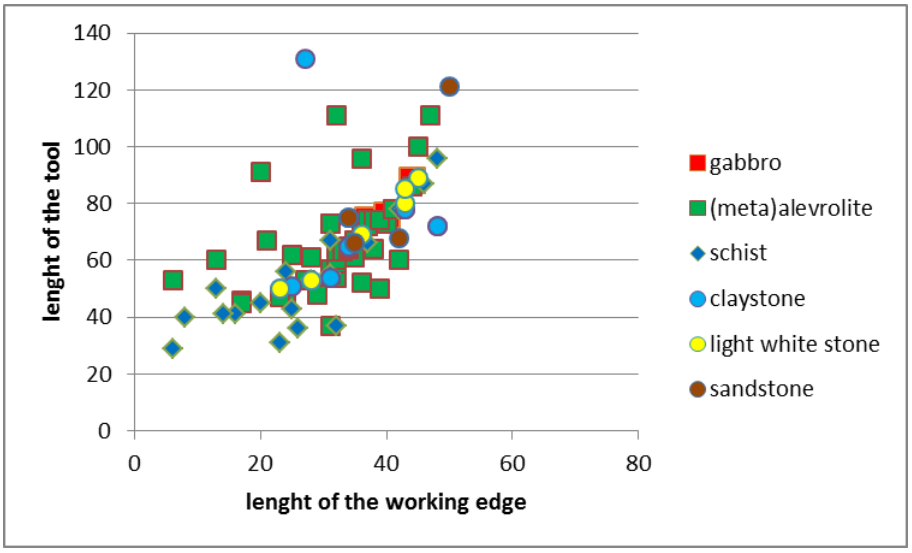


Fig. A 4.45. Celts: correlation between length of the cutting edge, length of the tool and geology; schist: R²= 0,7266; sandstone: R²= 0,1489; N= 95.

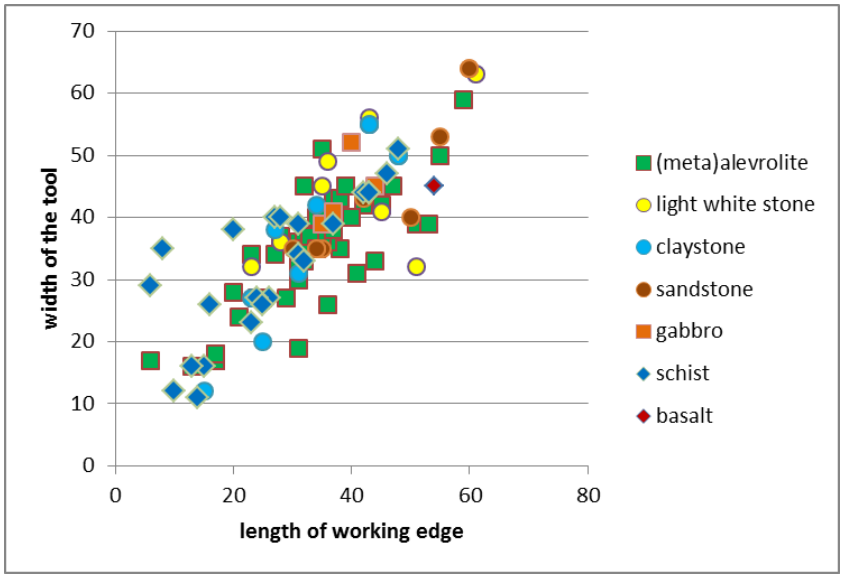


Fig. A 4.46. Celts: correlation between length of the cutting edge, width of the tool and geology; (meta)alevrolite: R^2= 0,5163; schist: R^2= 0,371; claystone R^2= 0,8556; sandstone R^2= 0,8657; N= 95.

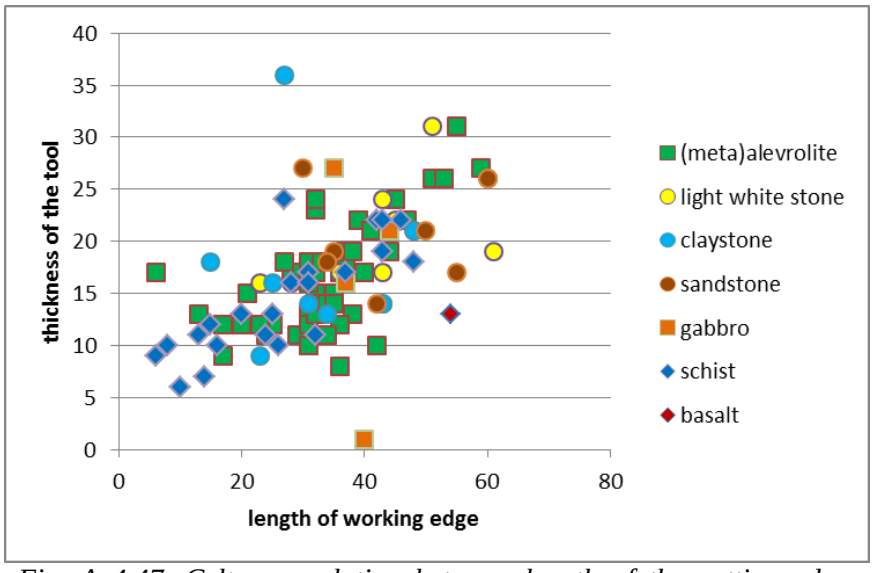


Fig. A 4.47. Celts: correlation between length of the cutting edge, thickness of the tool and geology; (meta)alevrolite: R^2= 0,3173; schist R^2= 0,4345; light white stone R^2= 0,312; N=95.

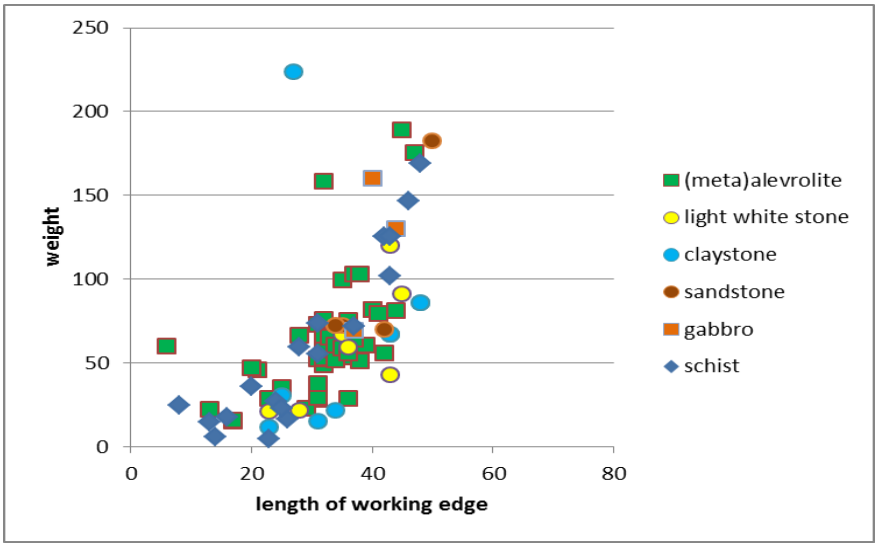


Fig. A 4.48. Celts: correlation between length of the cutting edge, thickness of the tool and geology; (meta)alevrolite: R^2= 0,3168; schist R^2= 0,6819; light white stone R^2= 0,4465; N=95.

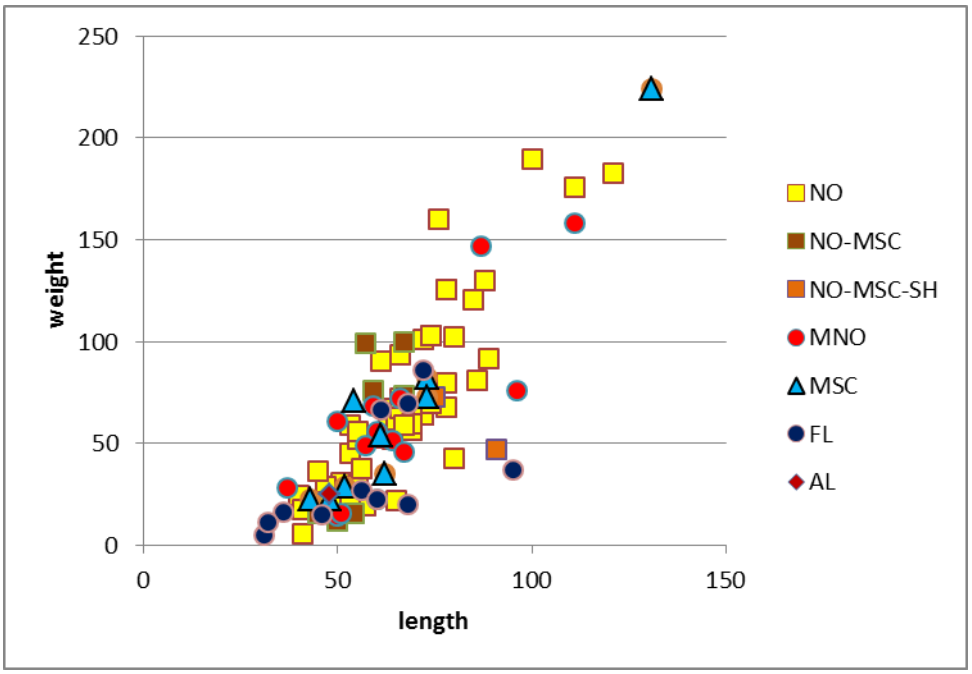


Fig. A 4.49. Celts:: a correlation between length, weight and use traces; NO: R^2= 0,548; MNO: R^2= 0,5451; FL: R^2= 0,3245; MSC: R^2= 0,6879; NO-MSC: R^2=0,283; N= 94.

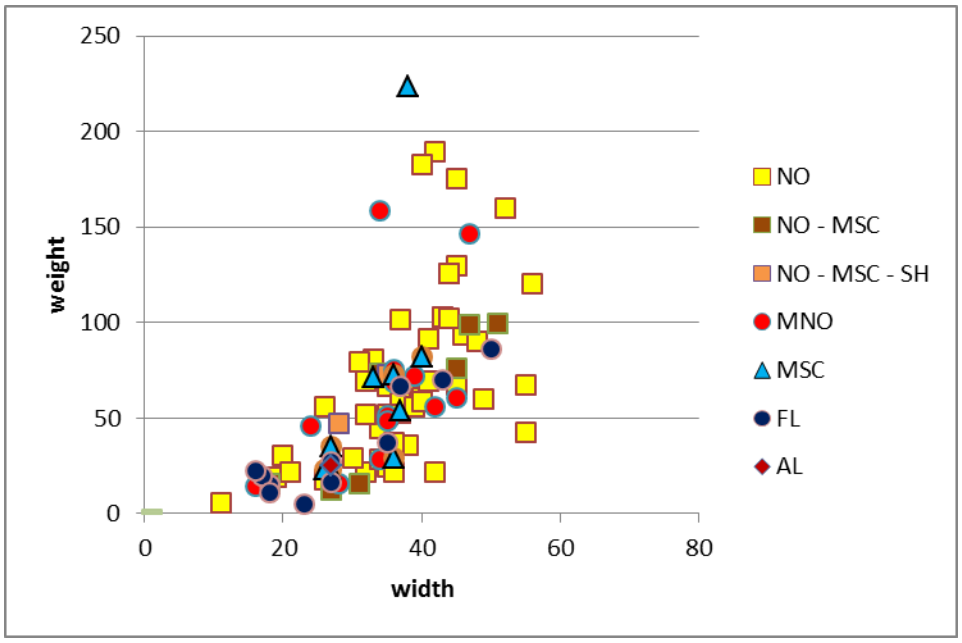


Fig. A 4.50. Celts: correlation between width, weight and use traces; NO: R^2= 0,284; NO-MSC: R^2= 0,6344; MNO: R^2= 0,2613; MSC: R^2= 0,1686; N= 94.

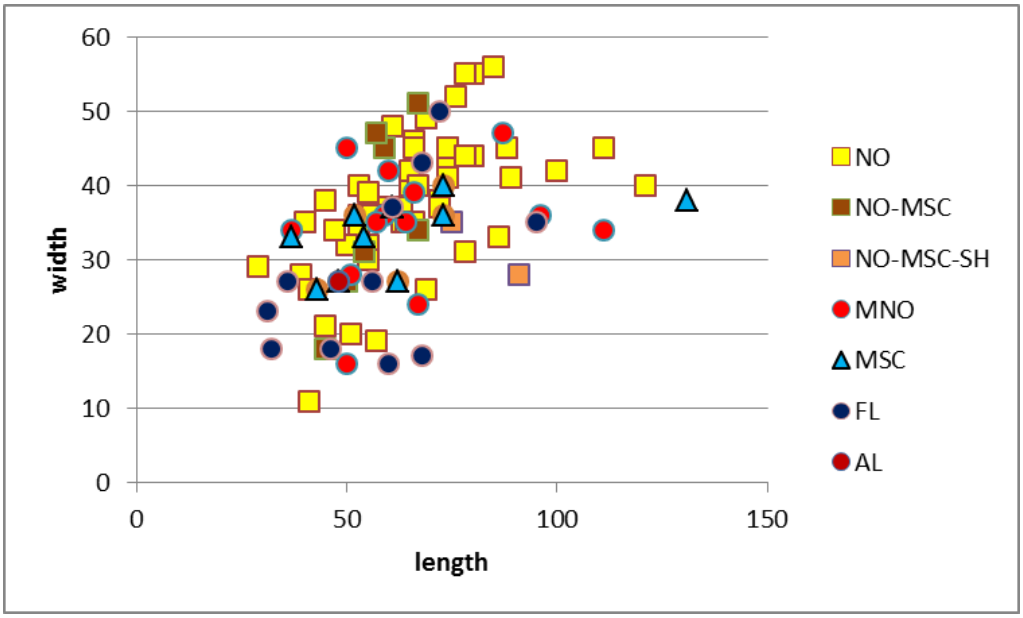


Fig.A 4.51. Celts: a correlation between length, width and use traces; NO: R^2= 0,4443; FL: R^2= 0,1654; N= 97.

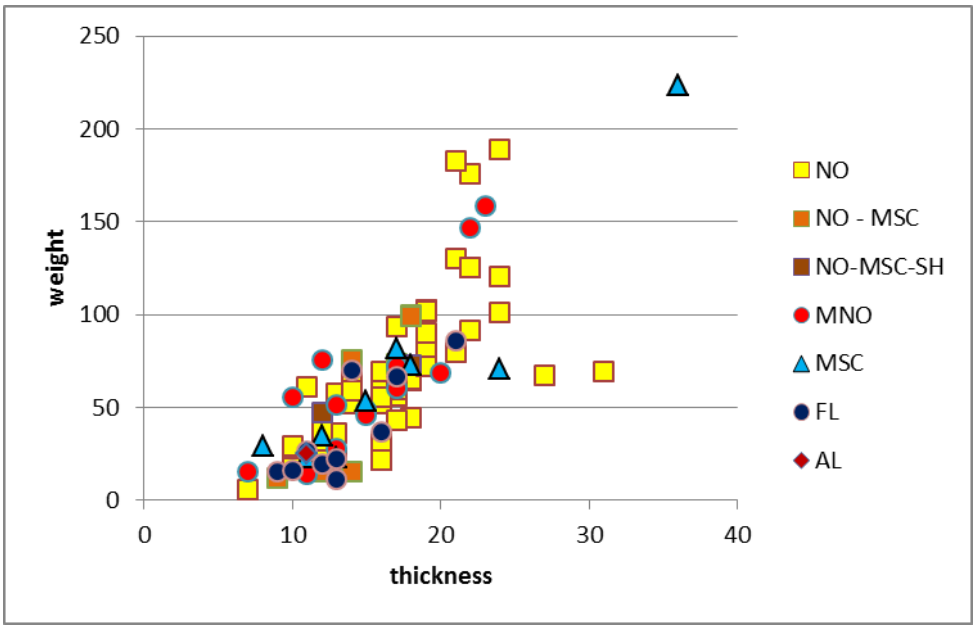


Fig.A 4.52. Celts: correlation between thickness, weight and use traces; NO: R^2= 0,548; FL: R^2= 0,3245; MSC: 0,6879; MNO: 0,5451; N= 94.

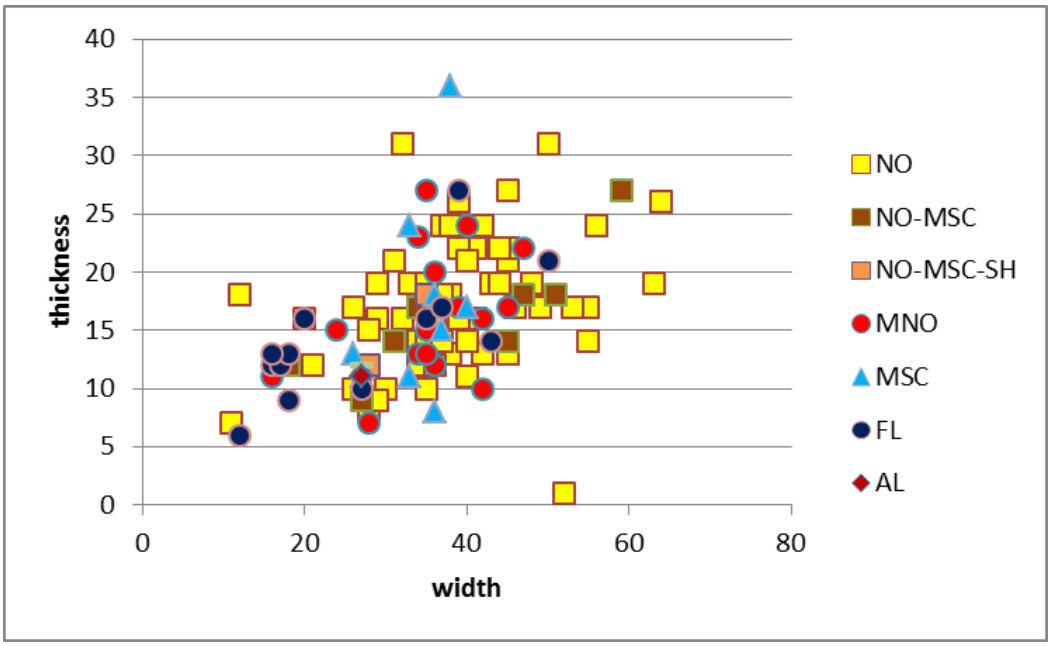


Fig. A 4.53. Celts: correlation between width, thickness and use traces; FL: R^2= 0,2872; NO-MSC: 0,6349; N= 128.

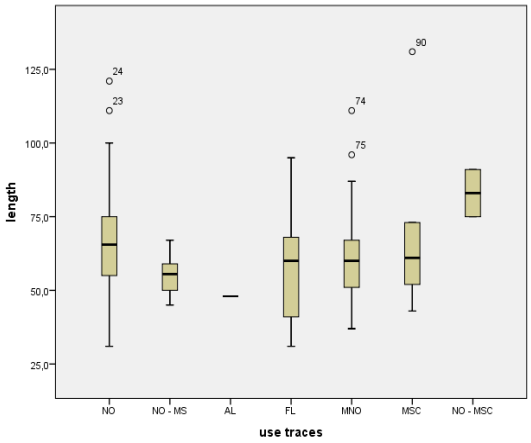


Fig.A 4.53. Percentiles distribution of the length of the fully preserved celts according to use traces; N= 95.

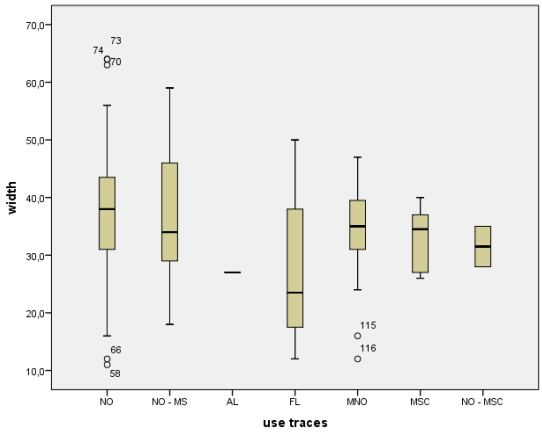


Fig.A 4.54. Percentiles distribution of the width of the 50% to fully preserved celts according to use traces; N= 128.

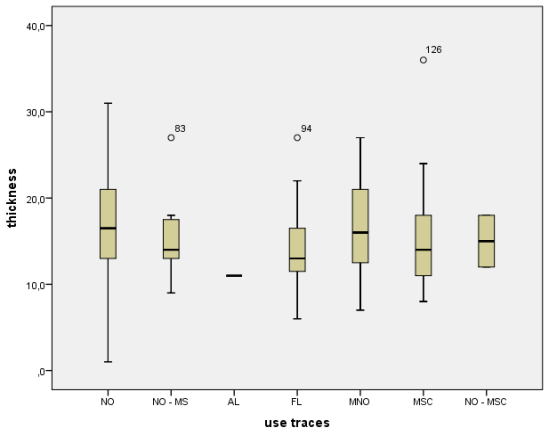


Fig.A 4.55. Percentiles distribution of the thickness of the 50% to fully preserved celts according to use traces; N= 128.

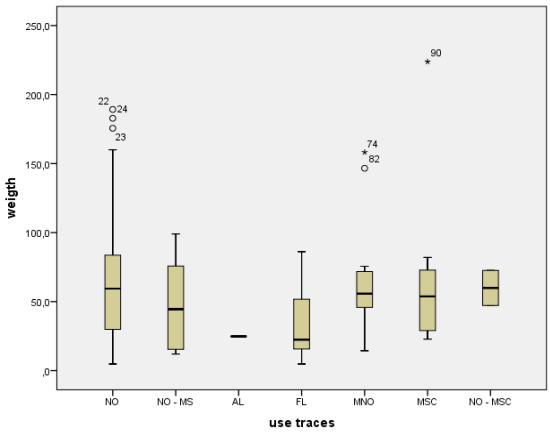


Fig.A 4.56.Percentiles distribution of the thickness of the 50% to fully preserved celts according to use traces; N= 95.

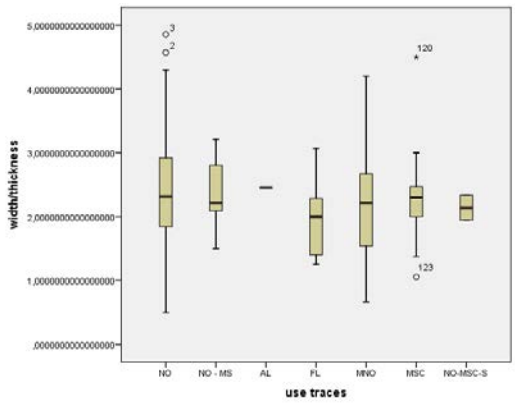


Fig.A4.57. Percentiles distribution of relation width/ thickness of the 50% to fully preserved celts according to use traces; N= 128.

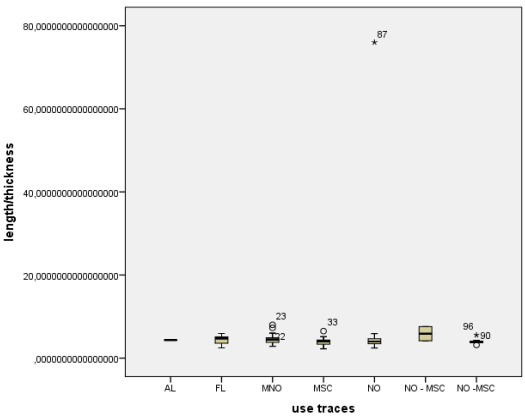


Fig.A 4.58. Percentiles distribution of relation length/ thickness of the fully preserved celts according to use traces; N= 95.

Use traces /N	Mean length	Standard deviation	Max length	Mean weight
alevrolite / 57	31	10	59	6
schist / 22	30	33	44	23
igneous/5	38	3	43	35
light white stone/ 19	39	13	61	15
sandstone / 9	42	12	60	30

Table A 4.3. Celts: the length of the working surfaces according to geology; N= 113.

Use traces /N	Mean length	Standard deviation	Max length	Mean weight
AL / 1	-	-	24	-
FC-MSC / 1	-	-	25	-
FL / 16	26	14	48	6
MNO/14	31	9	46	13
MSC /11	32	4	40	25
NO / 64	36	11	61	6
NO-MSC /4	35	16	59	20
NO-MSC-SH /1	-	-	34	-
SH/1	-	-	34	-

Table A 4.4. Celts: the length of the working surfaces according to use traces; N=113 .

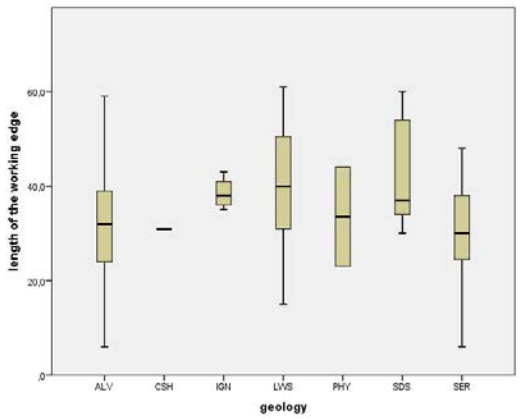


Fig.A 4.59. Percentiles distribution of the length of working edges of the celts according to geology; N= 111.

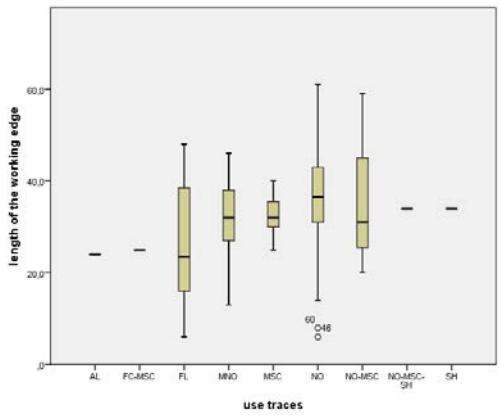


Fig.A 4.60. Percentiles distribution of the length of working edges of the celts according to use traces; N= 111.

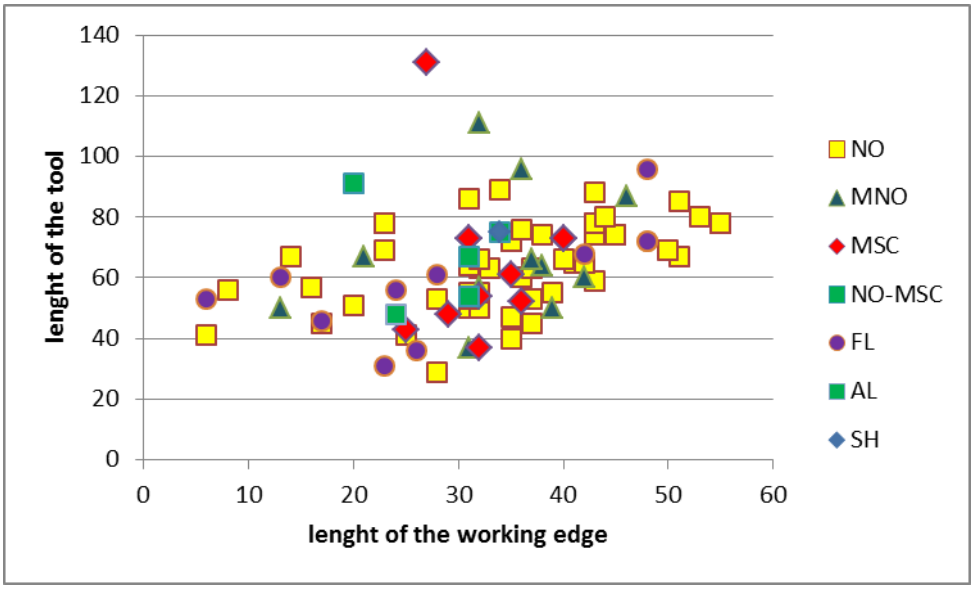


Fig.A 4.61. Celts: correlation between length of the cutting edge, length of the tool and use traces;

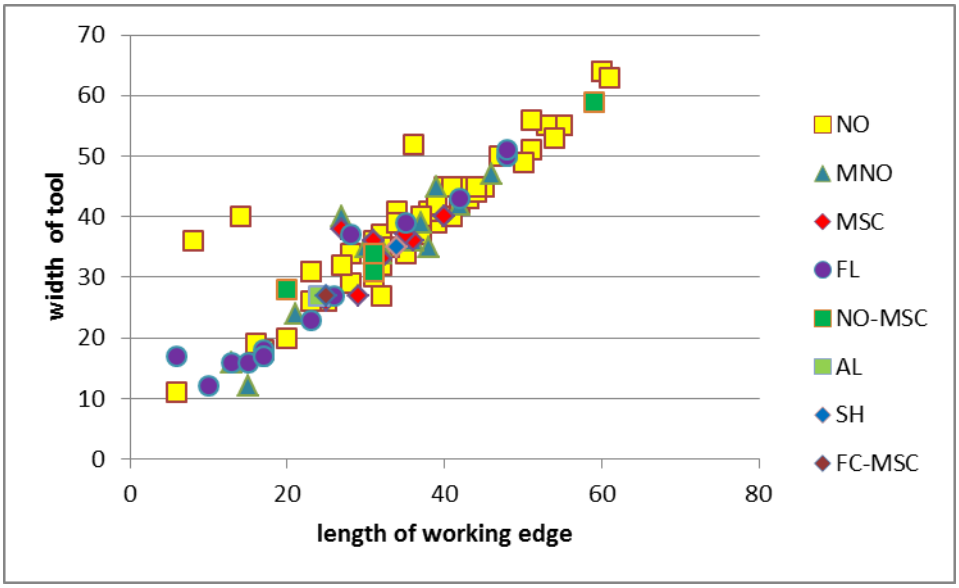


Fig.A 4.62. Celts: correlation between length of the cutting edge, width of the tool and use traces; flake negatives (NO): R^2= 0,7126; working edges with no use traces R^2= 0,9372; micro-flake negatives (MNO) R^2= 0,8351; N=113.

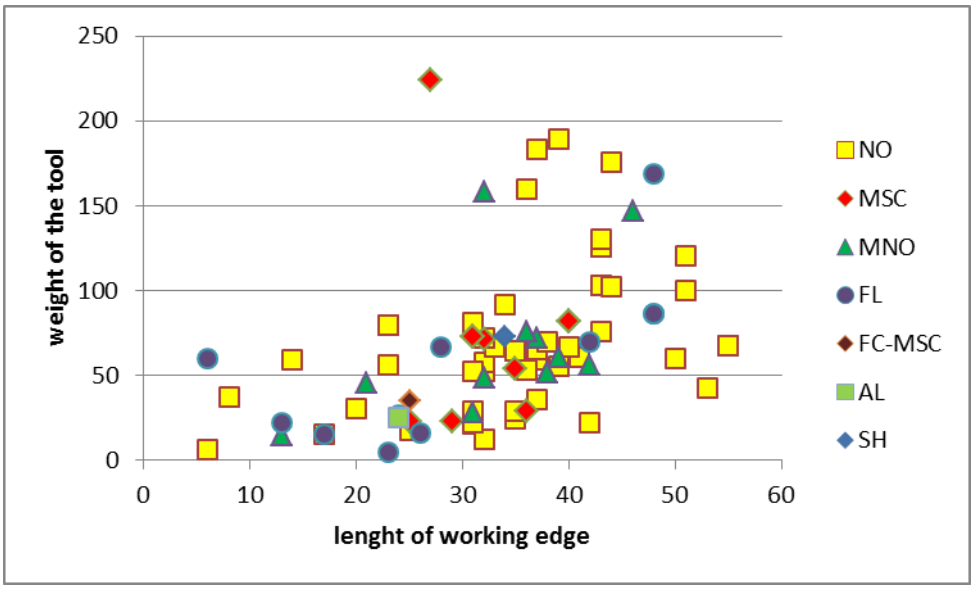


Fig.A 4.63. Celts: correlation between length of the cutting edge, weightof the tool and use traces;

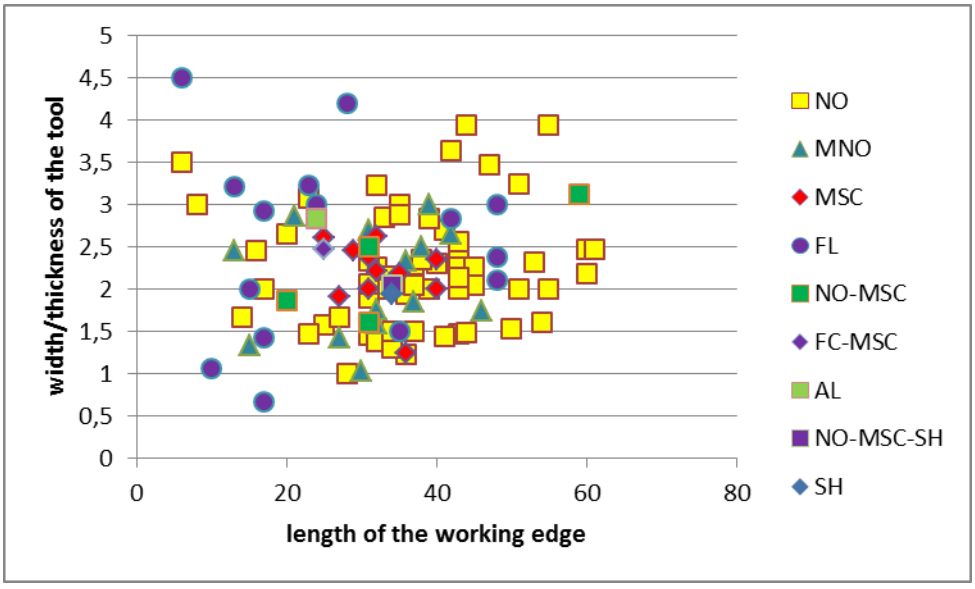


Fig. A 4.64. Celts: correlation between length of the cutting edge, thickness of the tool and use traces; N=113.

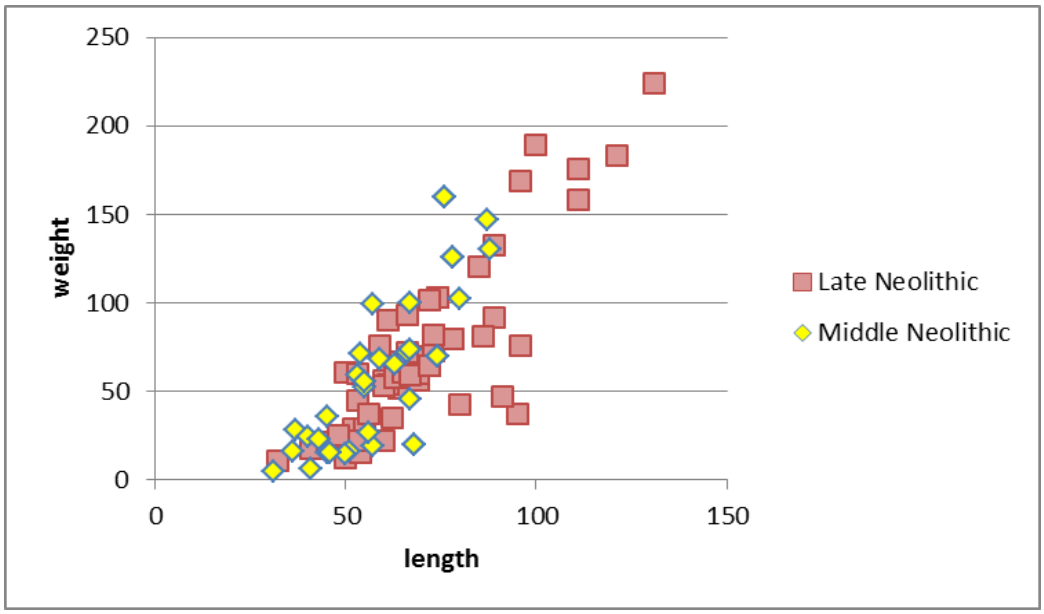


Fig.A 4.65. Celts: correlation between length and weight of the tools from the Late and Middle Neolithic; N= 97.

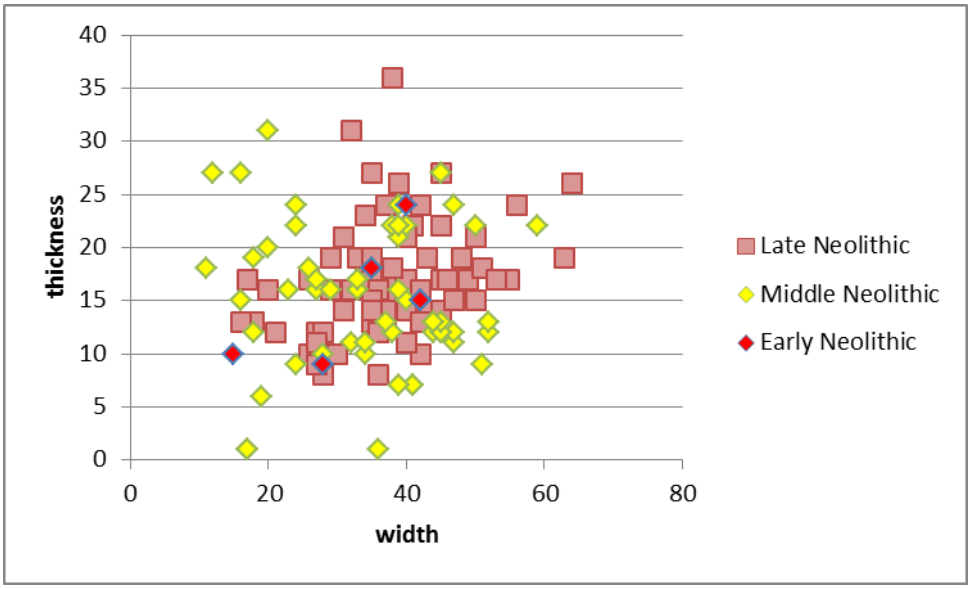


Fig. A 4.66 Celts: correlation between width and thickness of the tools from the Late and Middle Neolithic; N= 105.

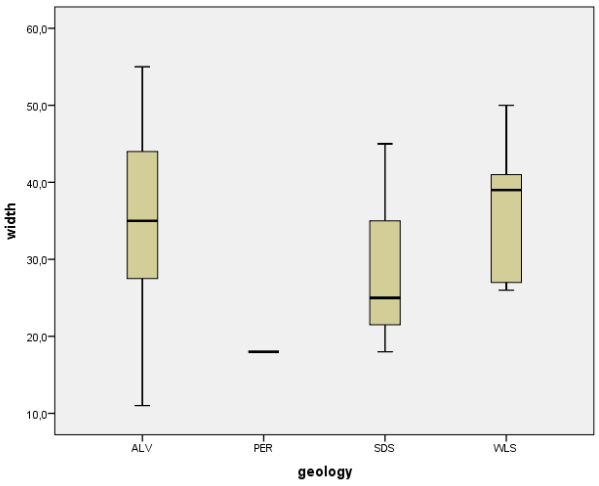


Fig. A4. 67.Percentiles distribution of the width of 50% to the fully preserved joiner planers according to geology; N= 33.

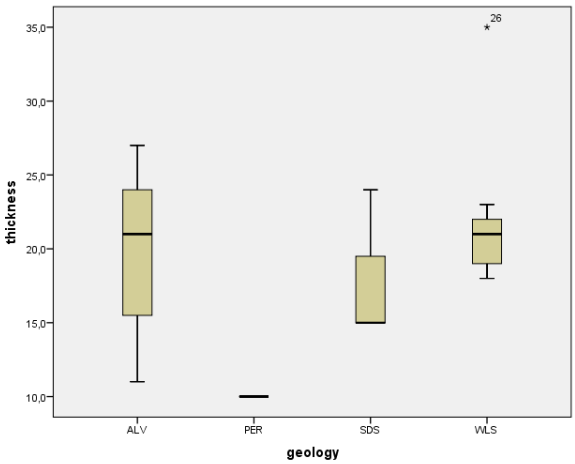


Fig. A4.68.Percentiles distribution of the thickness of 50% to the fully preserved joiner planers according to geology; N= 34.

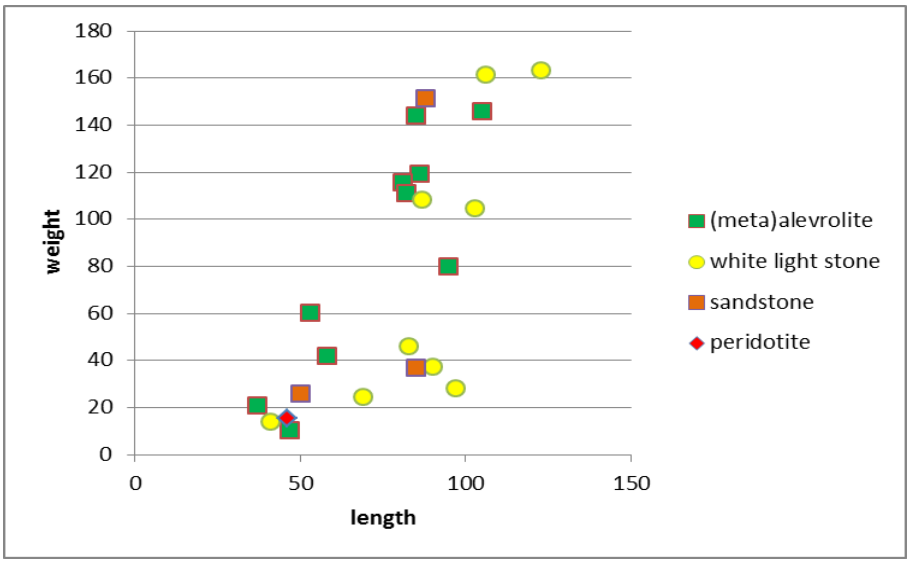


Fig. A4. 69. Adzes: correlation between length, weight and geology; alevrolite: R^2= 0,6607; light white stone R^2=0418; N=23.

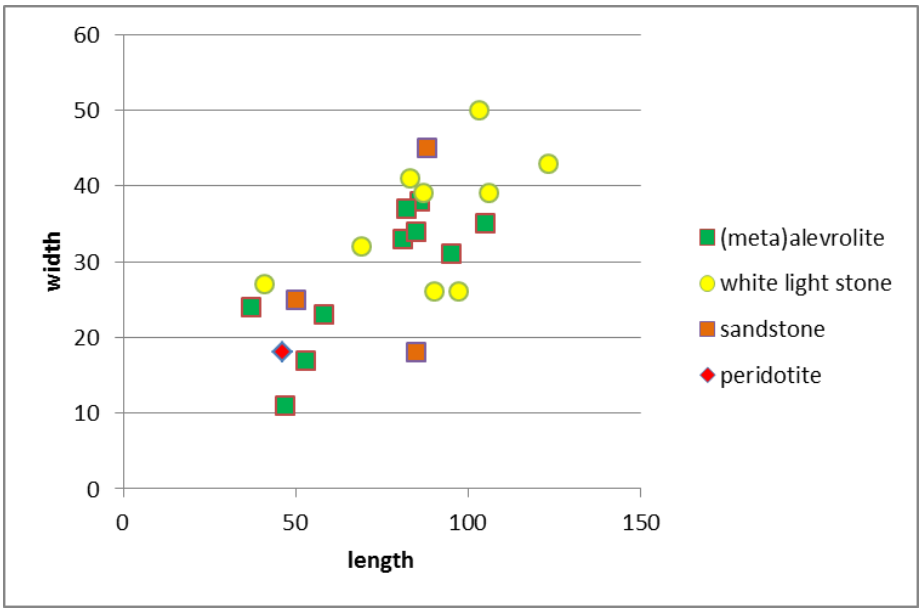


Fig..A 4. 70. Adzes: correlation between length, weight and geology; alevrolite: R²= 0,6318; light white stone R²=0418; N=23.

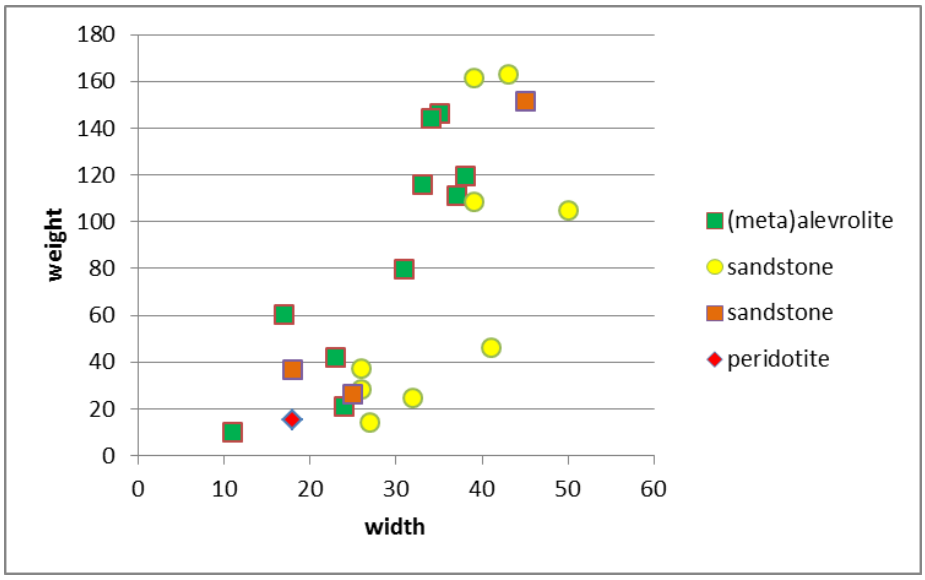


Fig..A 4.71. Adzes: correlation between width, weight and geology; alevrolite: R²= 0,6318; light white stone R²=0418; N=23.

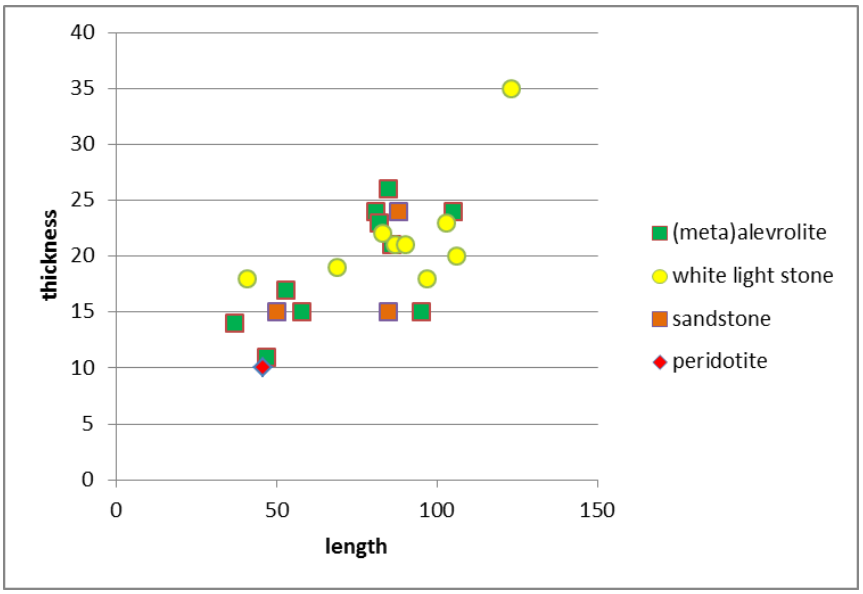


Fig..A 4.72. Adzes: correlation between thickness, length and geology; alevrolite: R^2= 0,3374; light white stone R^2=0,2269; N=23.

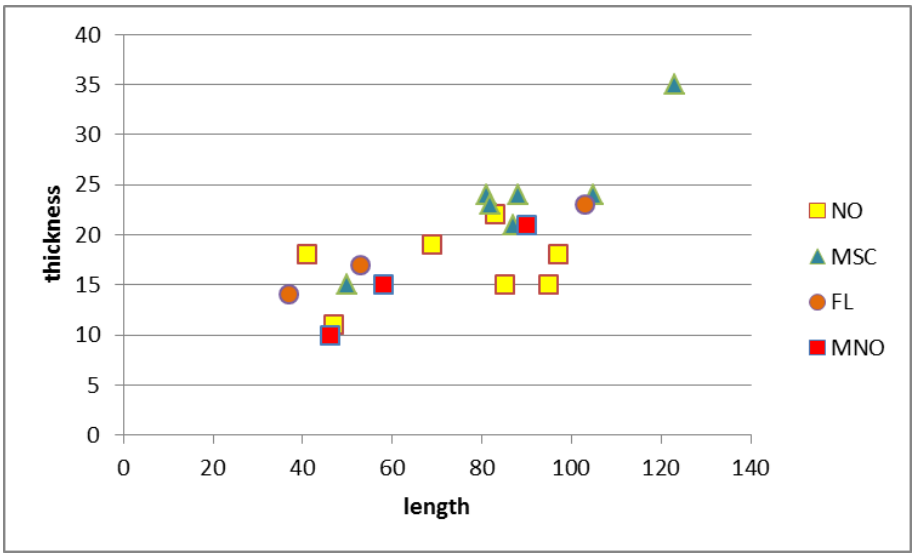


Fig..A 4.73. Adzes: correlation between, length, thickness and use traces; micro-scratches (MSC) R^2=0,8312; N=20.

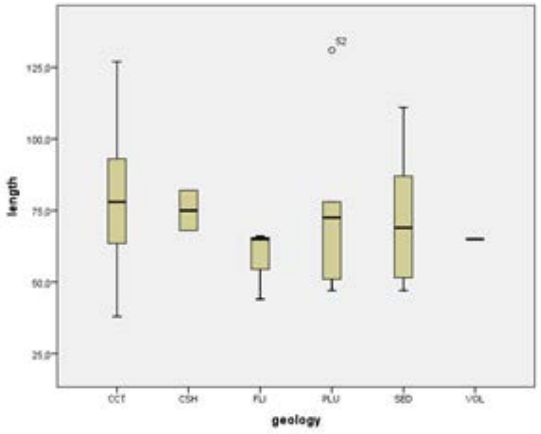


Fig. A5.1. Percentiles distribution of the length of the fully preserved percussive tools according to geology; N= 69.

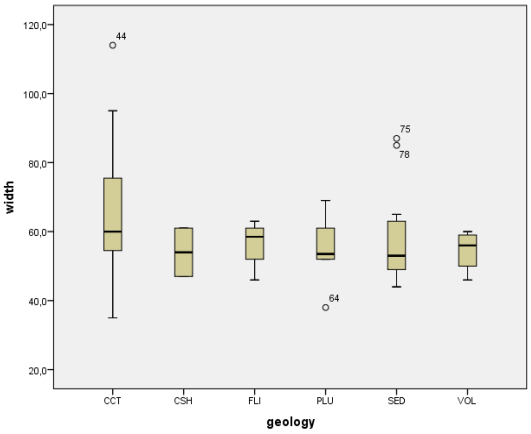


Fig. A5.2. Percentiles distribution of the width of the 50% to fully preserved percussive tools according to geology; N= 82.

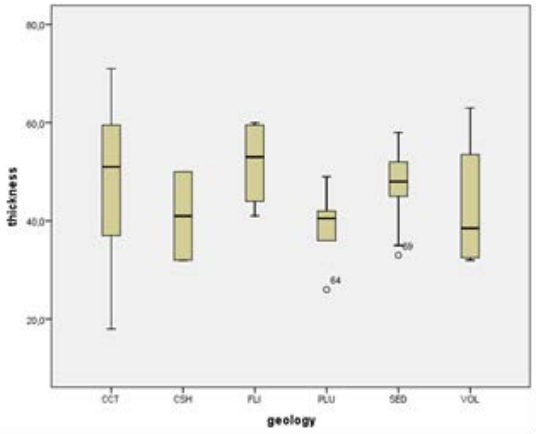


Fig. A5.3. Percentiles distribution of the thickness of the 50% to fully preserved percussive tools according to geology; N= 82.

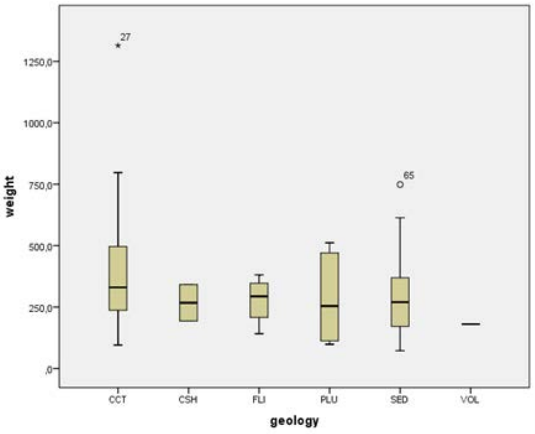


Fig. A5.4. Percentiles distribution of the weight of the fully preserved percussive tools according to geology; N= 70.

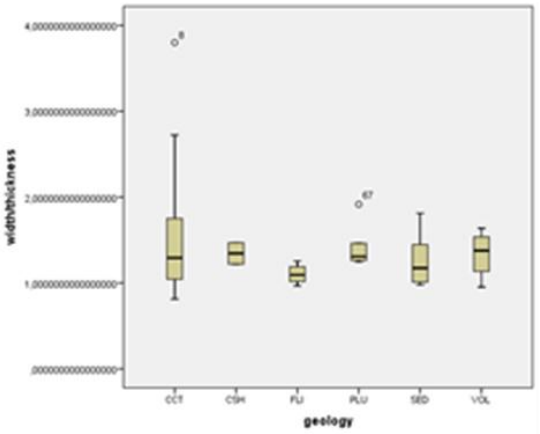


Fig. A5.5. Percentiles distribution of relation width/ thickness of the 50% to fully preserved percussive tools according to geology; N= 82

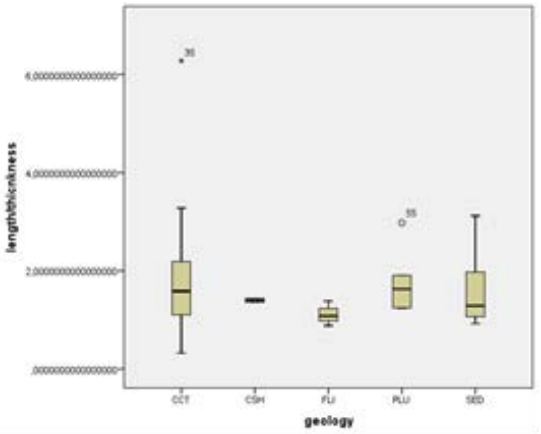


Fig. A5.6. Percentiles distribution of relation length/ thickness of the fully preserved percussive tools according to geology; N= 69

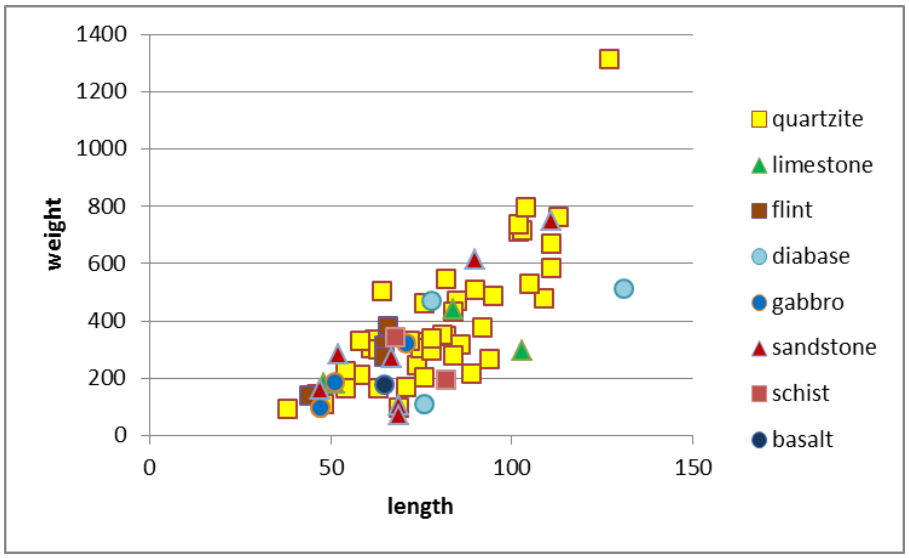


Fig. A5.7.Percussive tools: correlation between the length, weight and geology; quartzite tools: R^2= 0,5141; N= 69.

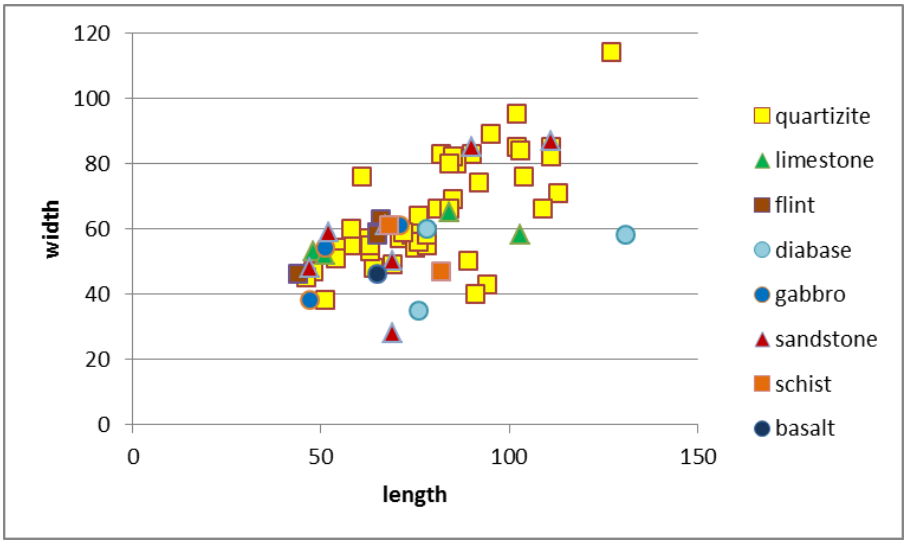


Fig. A5.8.Percussive tools: correlation between the length, width and geology; quartzite tools: R^2= 0,5066; N= 69.

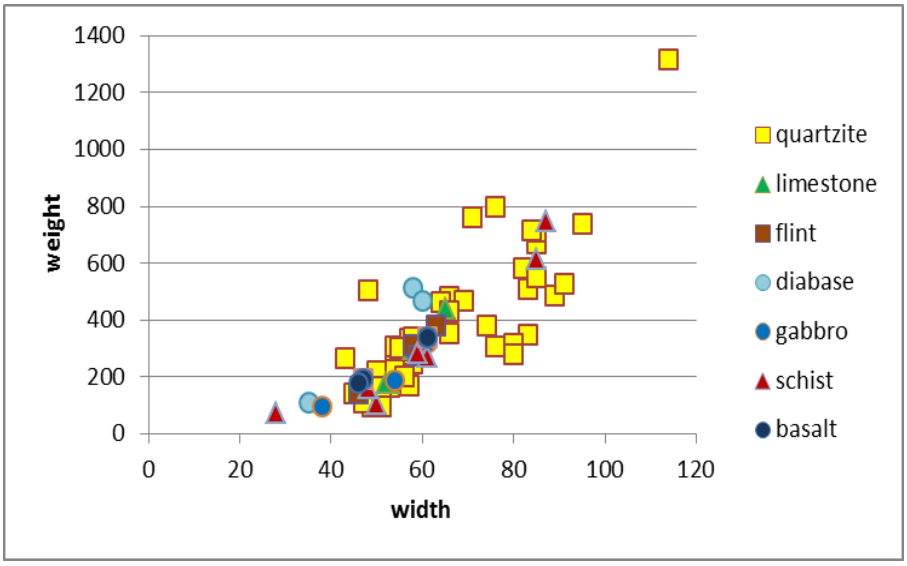


Fig.A5.9. Percussive tools: correlation between the width, weight and geology; quartzite: R^2= 0,4926; sandstone: R^2= 0,6015; limestone: R^2= 0,4102; flint: R^2= 0,5646; gabbro: R^2= 0,6209; N= 70.

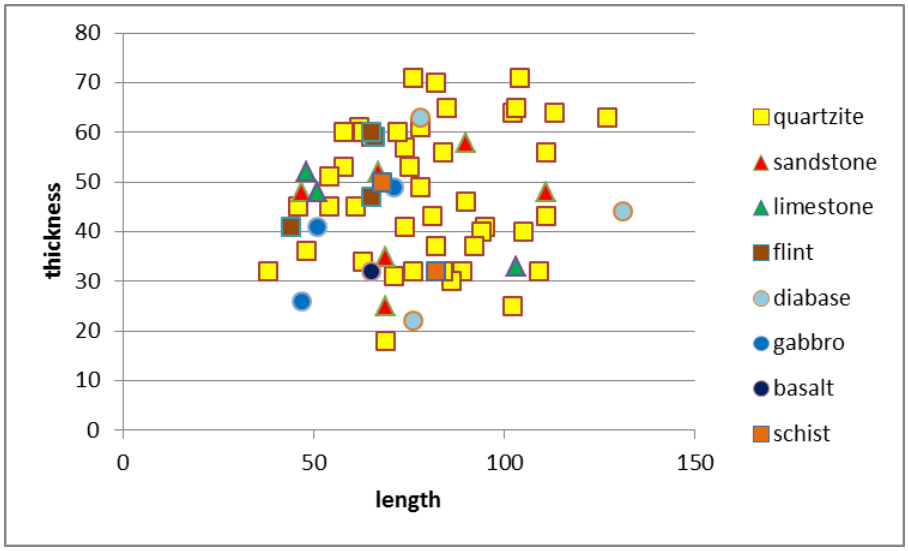


Fig.A5.10. Percussive tools: correlation between the length, thickness and geology; N= 69.

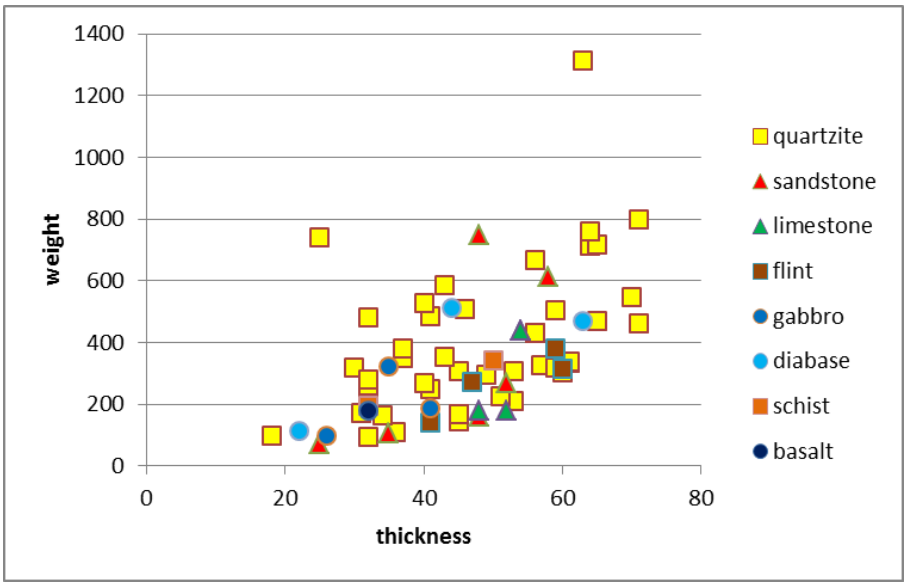


Fig.A5.11. Percussive tools: correlation between the, thickness, weight and geology; quartzite:R²= 0,2449; gabbro: R²= 0,8001; flint: R²= 0,647; N= 69.

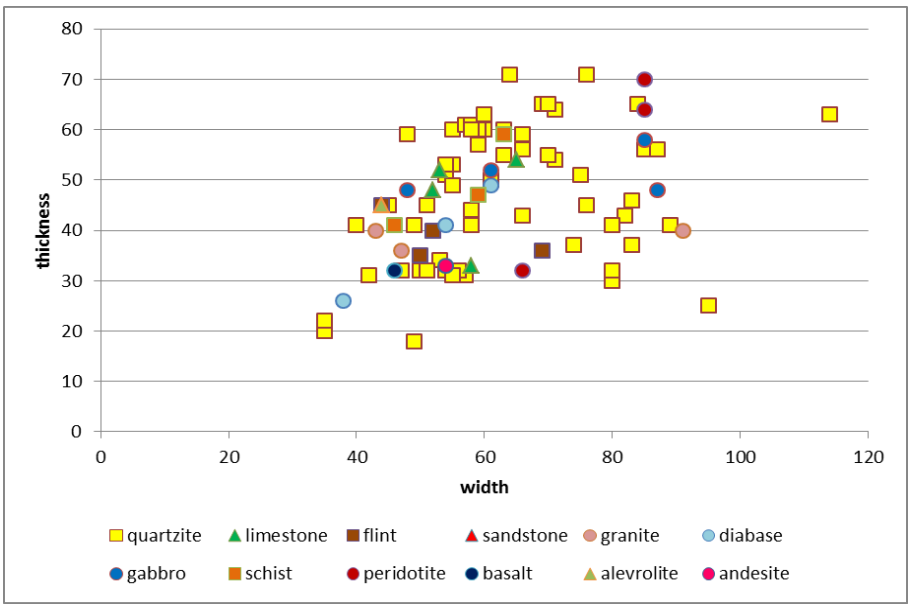


Fig.A5.12. Percussive tools: correlation between the width, thickness and geology; gabbro: R²= 0,9416; N= 82.

Number of active sides / Number of tools	$\bar{X}$	σ	Max length (mm)	Min length (mm)
one / 14	83	19	111	61
two / 12	87	24	131	48
three / 7	81	14	109	63
four / 9	83	21	127	47
five / 5	76	13	94	62
six / 22	63	17	104	38

Table A.5.1. Percussive tools: the length according to geology; N= 69.

Number of active sides/Number of tools	$\bar{X}$	σ	Max width (mm)	Min width (mm)
one / 14	65	19	91	28
two / 12	64	15	95	47
three / 8	56	13	83	35
four / 9	75	21	114	38
five / 5	55	10	69	43
six / 22	57	9	80	45

Table A.5.2. Percussive tools: the width according to geology; N= 70.

Number of active sides / Number of tools	$\bar{X}$	σ	Max thickness (mm)	Min thickness (mm)
one / 14	44	12	64	25
two / 12	44	14	65	18
three / 8	34	8	53	22
four / 9	49	16	71	26
five / 5	52	15	65	32
six / 21	50	10	71	32

Table A. 5.3. Percussive tools: the thickness according to geology; N= 69.

Number of active sides / Number of tools	$\bar{X}$	σ	Max weight (mm)	Min weight (mm)
one / 14	336,4	232,3	748,6	72,2
two / 12	477,8	241	761,2	96,6
three / 8	248,7	114,1	480,8	111,6
four / 9	490	338	1314,6	98,4
five / 5	360,4	119	470,2	180,4
six / 22	279,7	150	797,4	95,2

Table A. 5.4 Percussive tools: the weight according to geology; N= 70

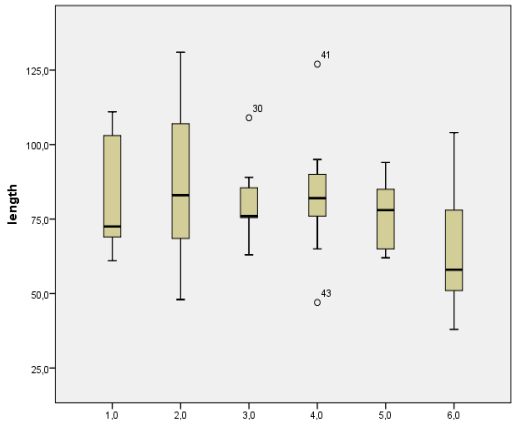


Fig.A5.13. Percentiles distribution of the length of the fully preserved percussive tools according to number of the active sides; N= 69.

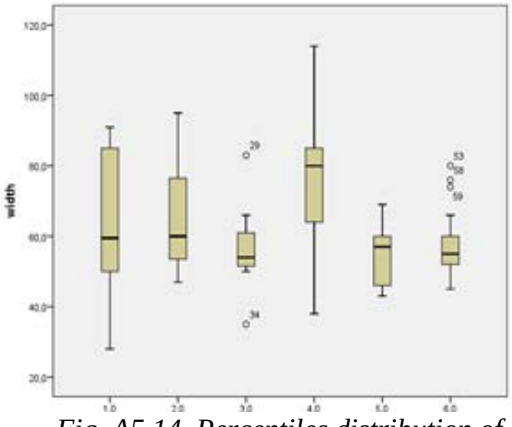


Fig. A5.14. Percentiles distribution of the width of the fully preserved percussive tools according to number of the active sides; N= 70.

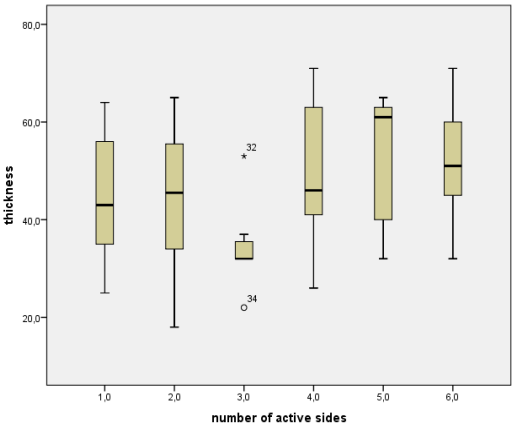


Fig. A5.15. Percentiles distribution of the thickness of the fully preserved percussive tools according to number of the active sides; N= 69.

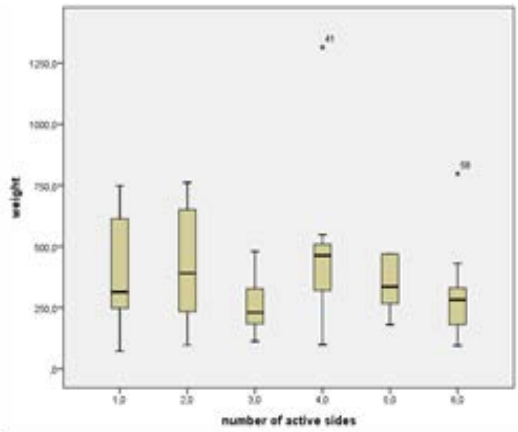


Fig.A5.16. Percentiles distribution of the weight of the fully preserved percussive tools according to number of the active sides; N= 69.

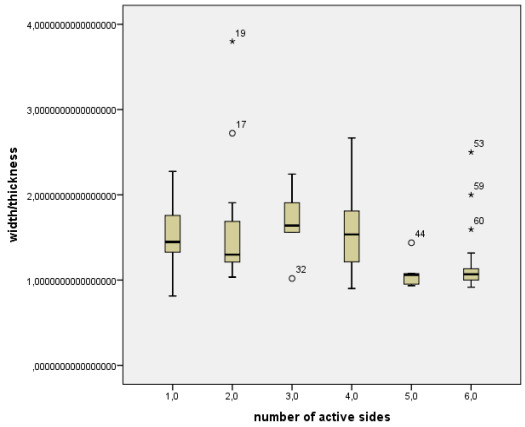


Fig. A5.17. Percussive tools: correlation width/ thickness according to the number of the active surfaces; N= 69.

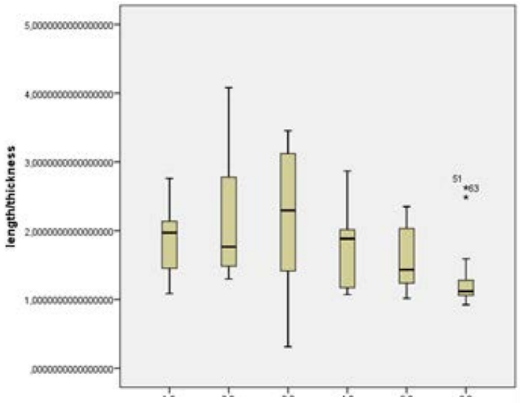


Fig. A5.18. Percussive tools: correlation length/ thickness according to the number of the active surfaces; N= 69.

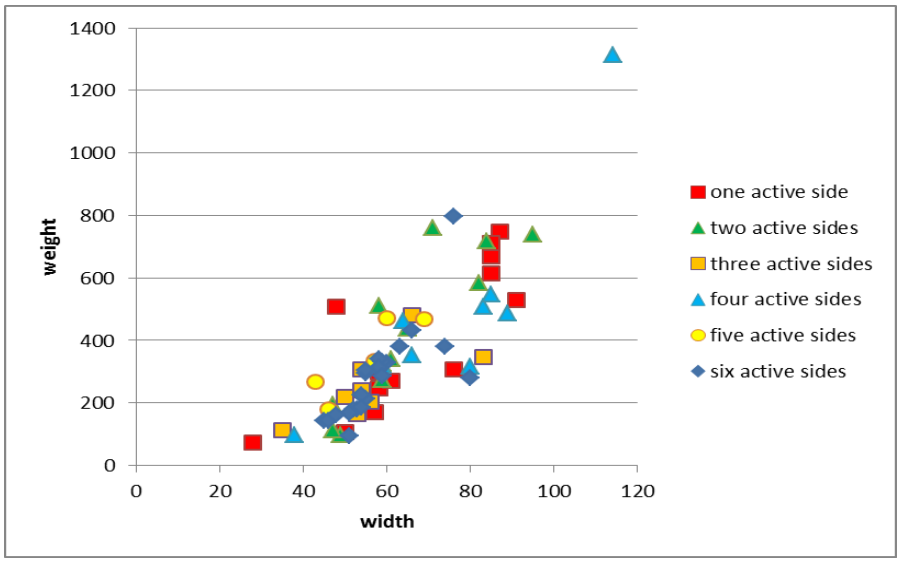


Fig. A5.19. Percussive tools: correlation between the the tools with one and more active sides,width and weight; one active side: R^2= 0,5812; three active sides: R^2= 0,4991; four active sides: R^2= 0,-0606; six active sides: R^2= 0,3637; N= 70.

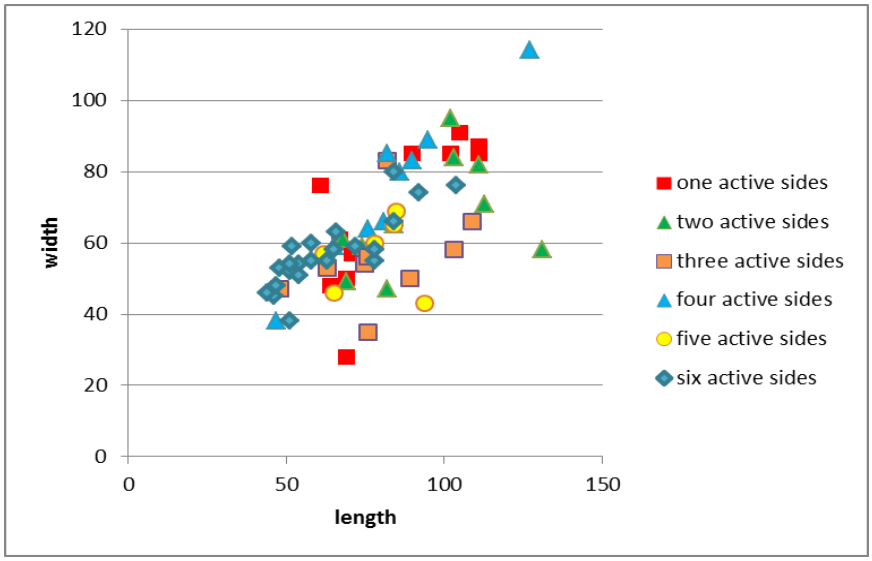


Fig.A5.20. Percussive tools: correlation between the tools with one and more active surfaces, length and width: R^2= 0,4944; Two active sides: R^2= 0,4884; six active sides: R^2= 0,6345; N= 69.

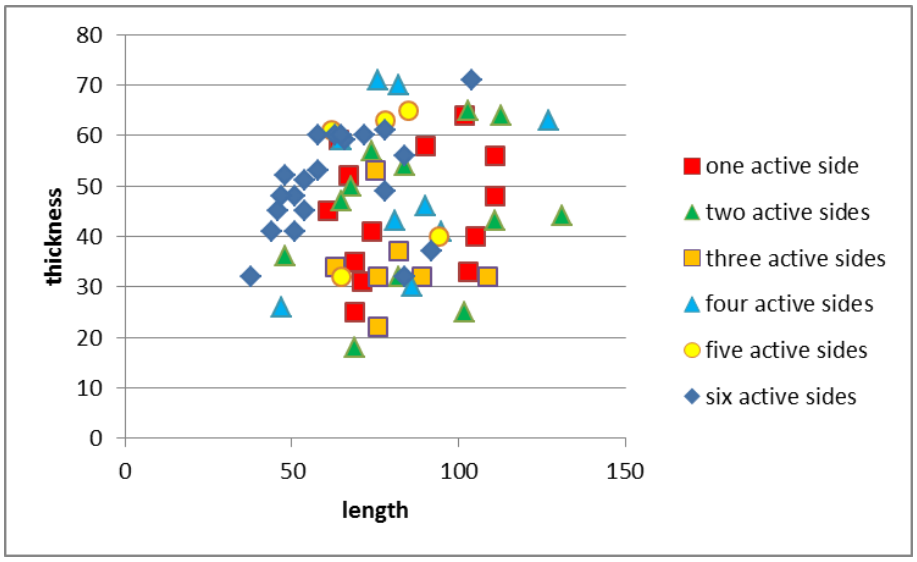


Fig.A5.21. Percussive tools: correlation between the tools with one and more active surfaces, length and thickness; six active sides: R^2= - 0,783; N= 69.

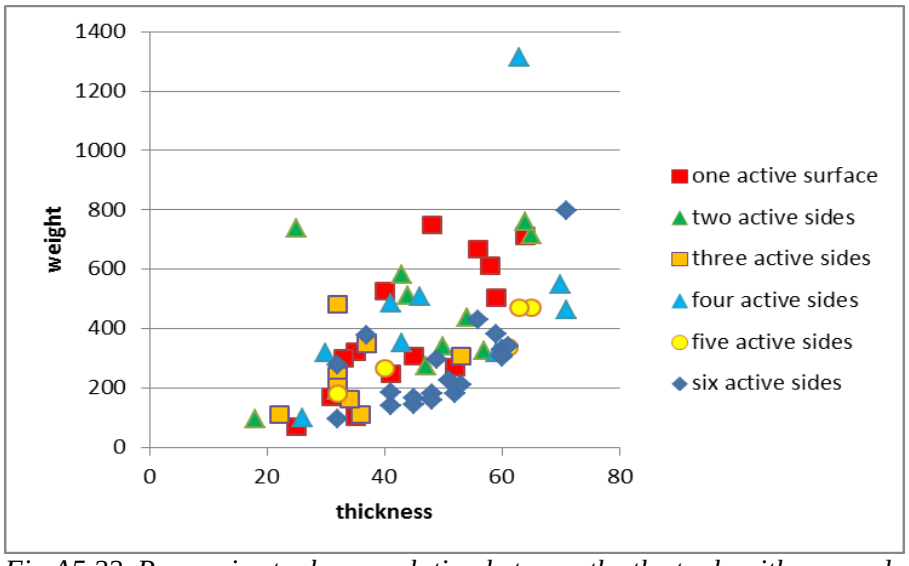


Fig.A5.22. Percussive tools: correlation between the the tools with one and more active surfaces, thickness and weight; one active side: R^2= 0,5232; two active sides: R^2= 0,1551; four active sides: R^2= 0,2728; five active sides: 0,8458; six active sides: R^2= 0,3521; N= 69.

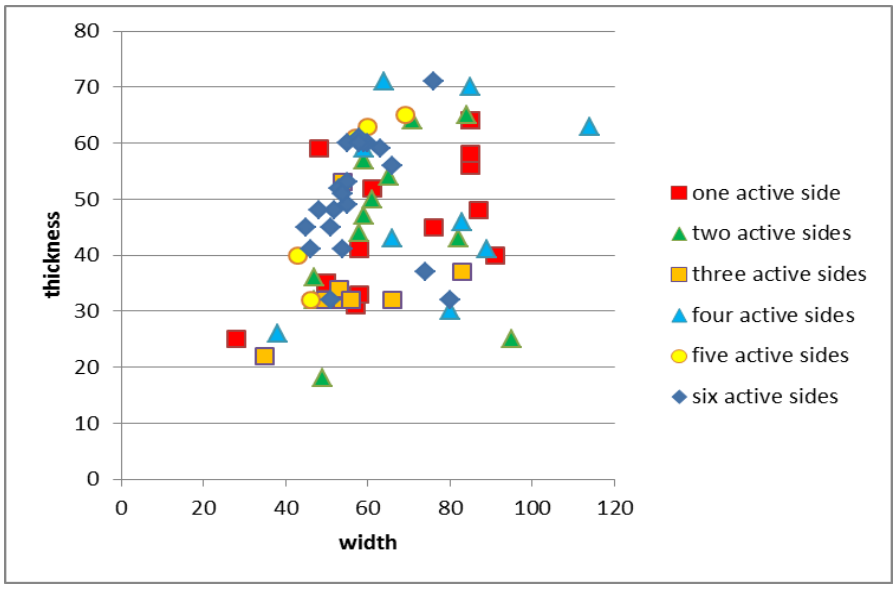


Fig.A5.23. Percussive tools: correlation between the tools with one and more active surfaces, width and thickness; one active side: R^2= 0,5384; two active sides: R^2= -0,169; Three active sides: R^2= - 0237; four active sides: R^2= - 0,109; five active sides: 0,7599; six active sides: R^2= - 0,425; N= 69.

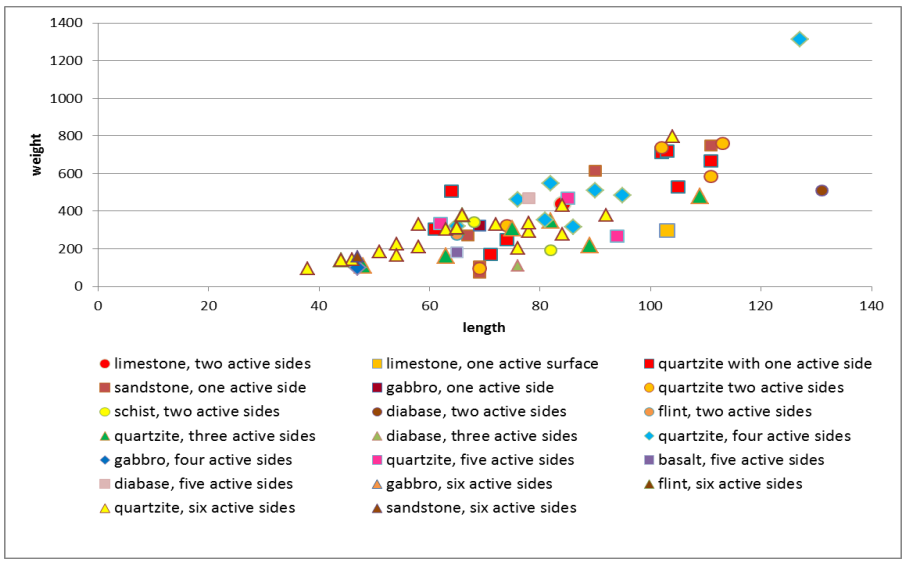


Fig.A5.24. Percussive tools: correlation between geology, the tools with one and more active surfaces, length and weight; quartzite: one active side: R^2= 0,3941; three active sides: R^2= 0,6696; six active sides: R^2= 0,5759; sandstone: one active sides: 0,4613; N= 69.

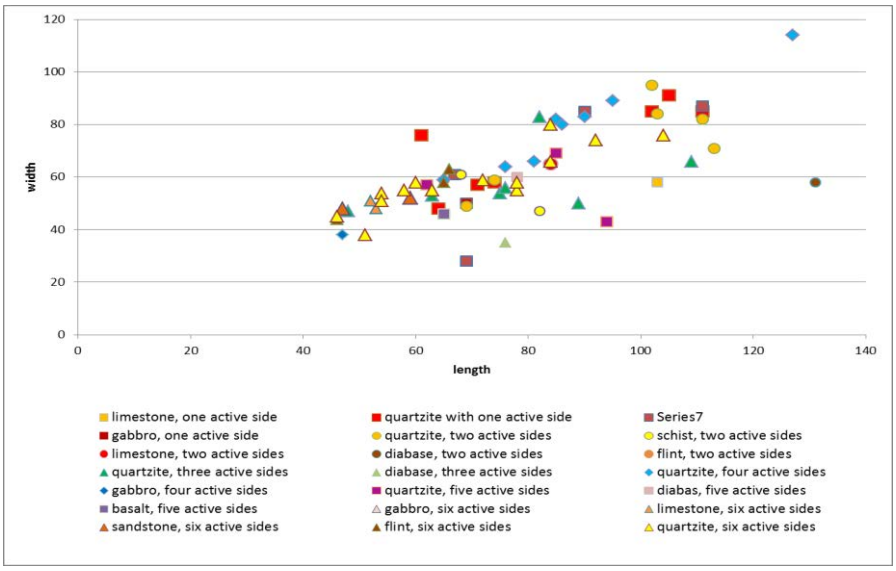


Fig.A5.25. Percussive tools: correlation between geology, the tools with one and more active surfaces, length and width; quartzite: one active side: R^2= 0,9892; two active sides: R^2= 0,248; four active sides: R^2= 0,9044; six active sides: R^2= 0,1732; sandstone: one active sides: 0,6021; N= 69.

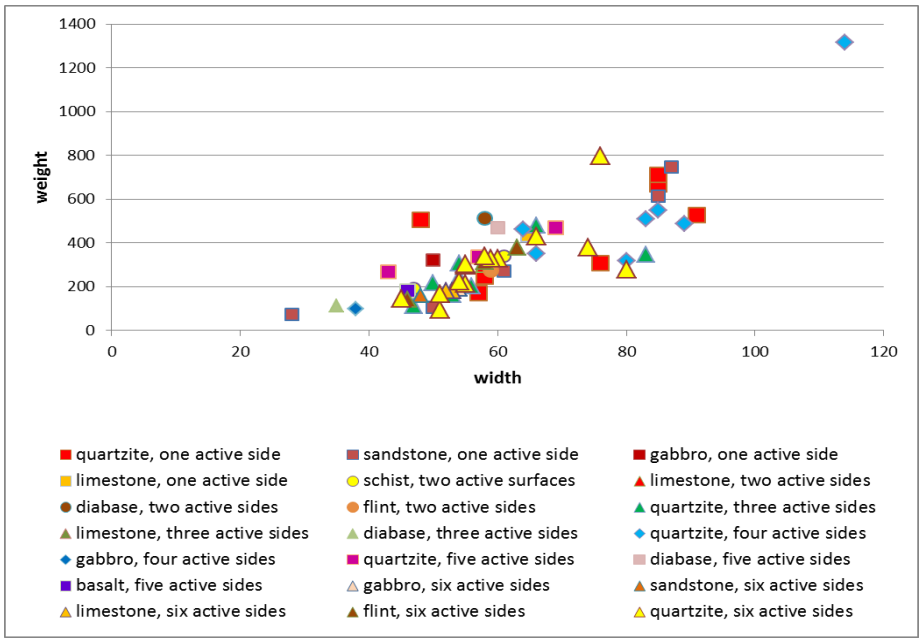


Fig.A5.26. Percussive tools: correlation between geology, the tools with one and more active surfaces, width and weight; quartzite: two active sides: R^2= 0,506; three active sides: R^2= 0,4186; four active sides: R^2= 0,4992; five active sides R^2= 0,9203; six active sides: R^2= 0,3344; sandstone: one active sides: 0,6942; N= 70.

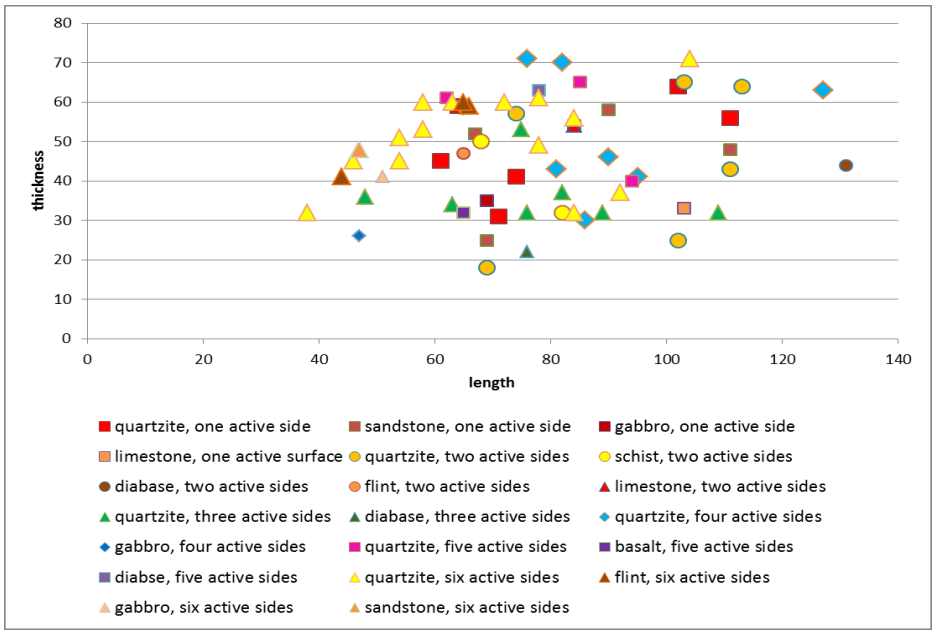


Fig.A5.27. Percussive tools: correlation between geology, the tools with one and more active surfaces, length and thickness; N= 69.

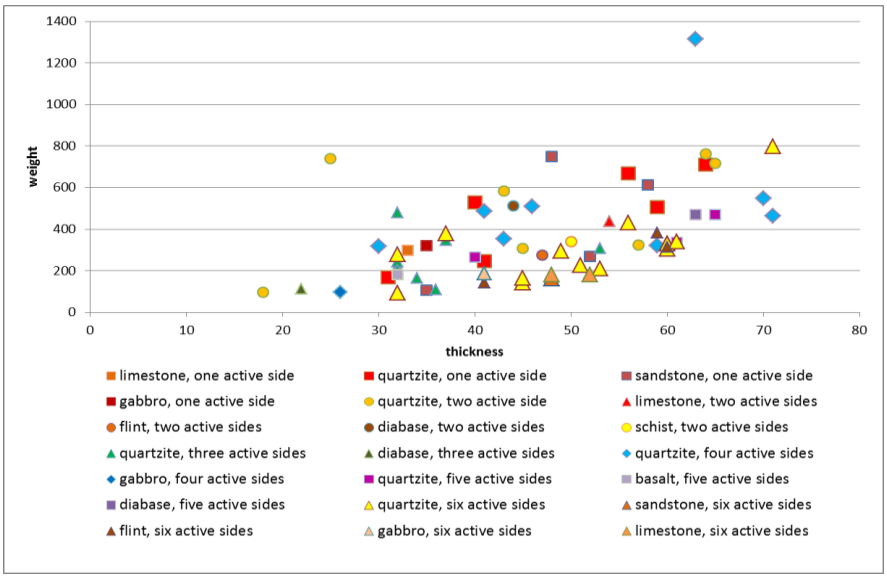


Fig.A5.28. Percussive tools: correlation between geology, the tools with one and more active surfaces, thickness and weight; quartzite: one active sides: R^2= 0,6604; two active sides: R^2= 0,2825; four active sides: R^2= 0,1388; five active sides R^2= 0,7203; N= 69.

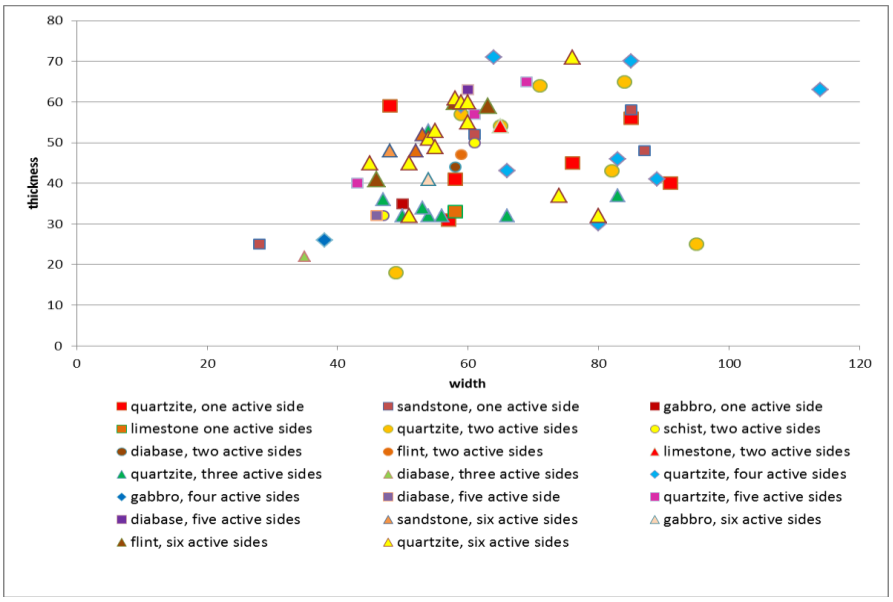
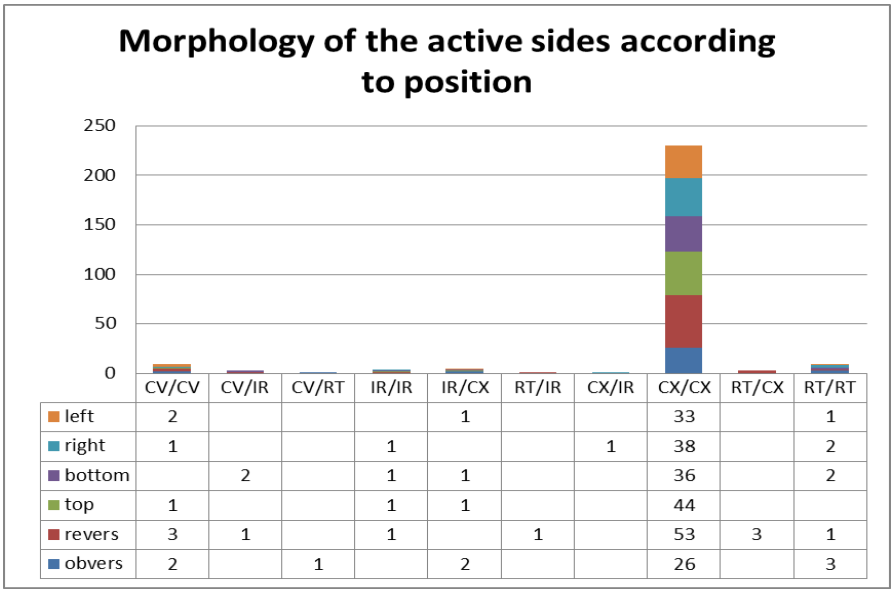


Fig.A5.29. Percussive tools: correlation between geology, the tools with one and more active surfaces, width and thickness; sandstone: one active sides R^2= 0,6216; N= 69.



	CV/CV	CV/IR	CV/RT	IR/IR	IR/CX	RT/IR	CX/IR	CX/CX	RT/CX	RT/RT
left	2				1			33		1
right	1			1			1	38		2
bottom		2		1	1			36		2
top	1			1	1			44		
revers	3	1		1		1		53	3	1
obvers	2		1		2			26		3

fig.A5.30, Percussive tools: morphology of the active sides according to position; N= 266.

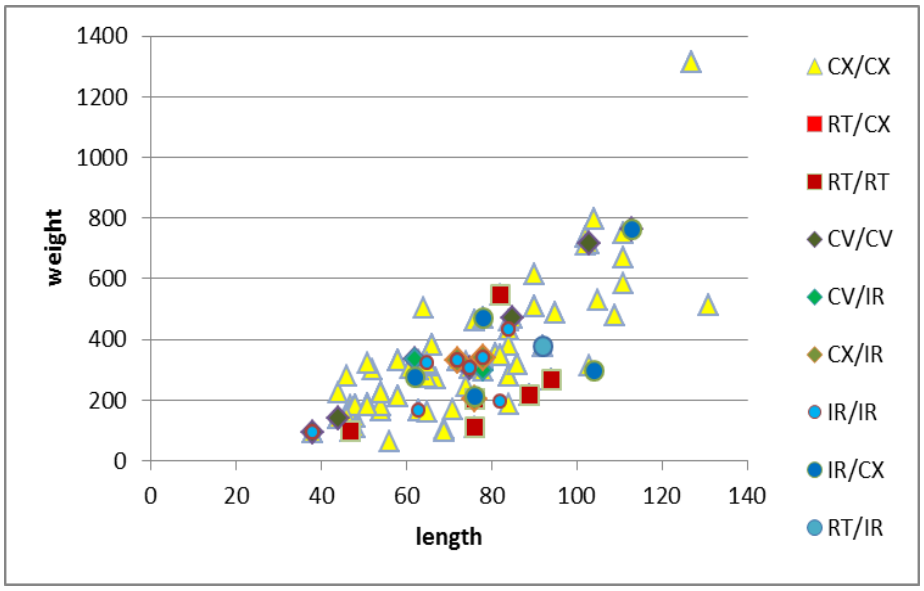


Fig.A5.31. Percussive tools: correlation between morphology of the active sides, length and weight; convex (CX/CX): R^2= 0,5336; irregular (IR/IR): R^2= 0,6391; N= 256.

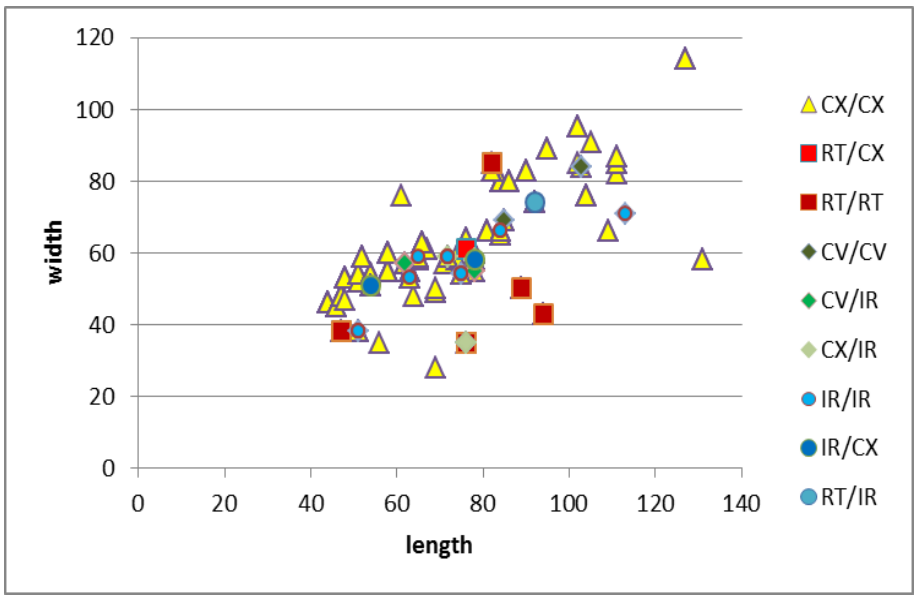


Fig.A5.32. Percussive tools: correlation between morphology of the active sides, length and width; convex (CX/CX): R^2= 0,3873; N= 256.

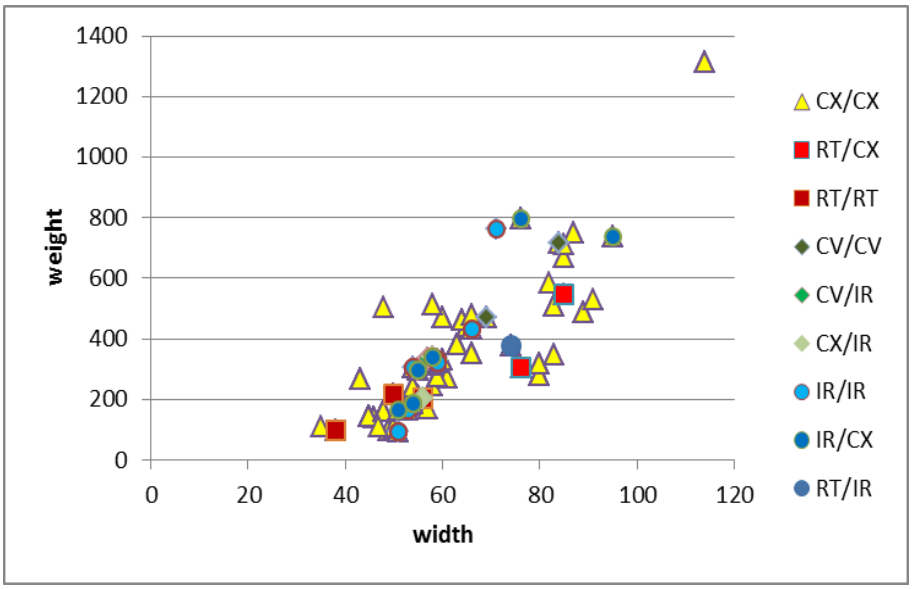


Fig.A5.33. Percussive tools: correlation between morphology of the active sides, width and weight; convex (CX/CX): R^2= 0,503; irregular (IR/IR): R^2= 0,326, (IR/CX) R^2= 0,5513; flat (RT/RT) R^2= 0,7155; N= 257.

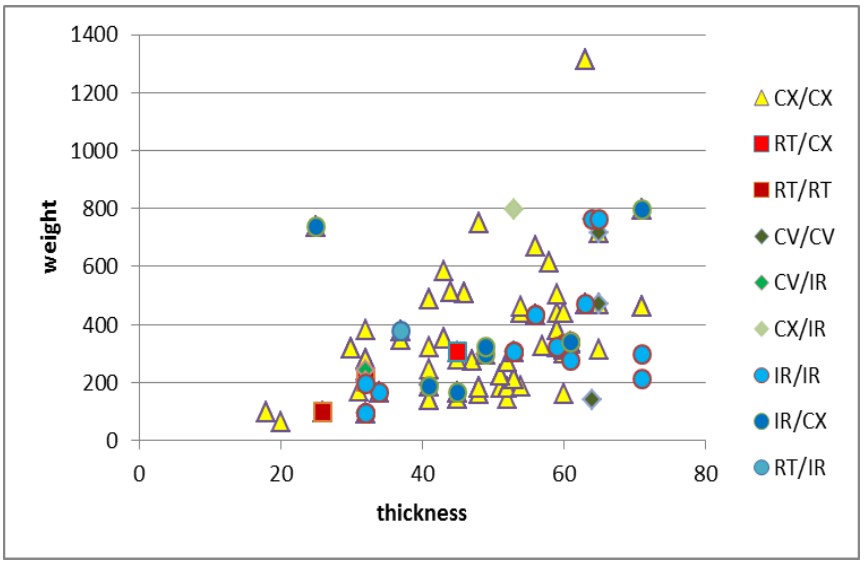


Fig.A5.34. Percussive tools: correlation between morphology of the active sides, thickness and weight; convex (CX/CX): R^2= 0, 1469; irregular (IR/IR): R^2= 0,361; concave (CV/CV): 0,3833; N= 255.

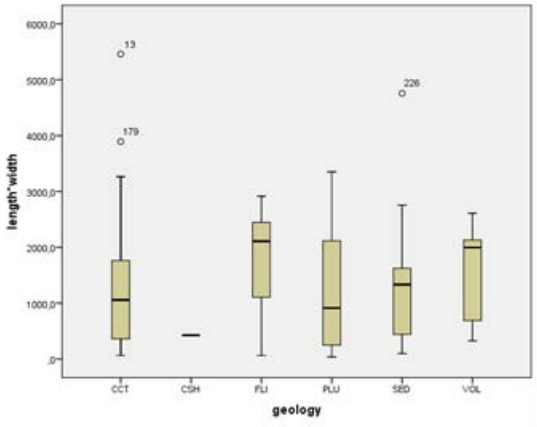


Fig. A5.35. Percentiles distribution of the size of the active surfaces according to the geology; N= 262.

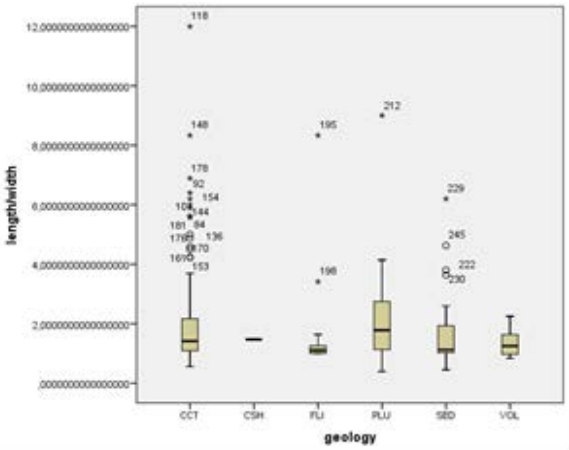


Fig. A5.36. Percentiles distribution of correlation length/width of the active surfaces according to the geology;N= 262.

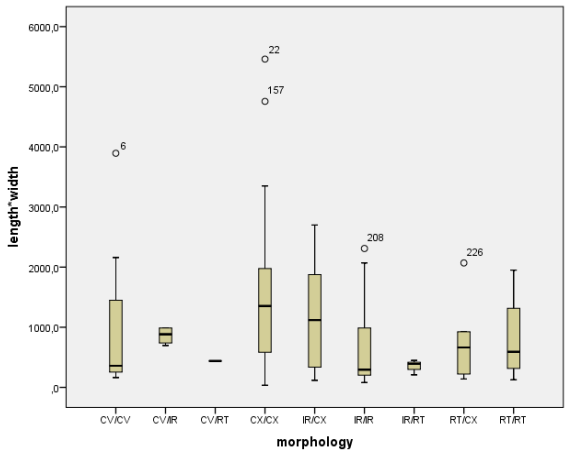


Fig. A5.37. Percentiles distribution of the size of the active surfaces according to the morphology;N= 240.

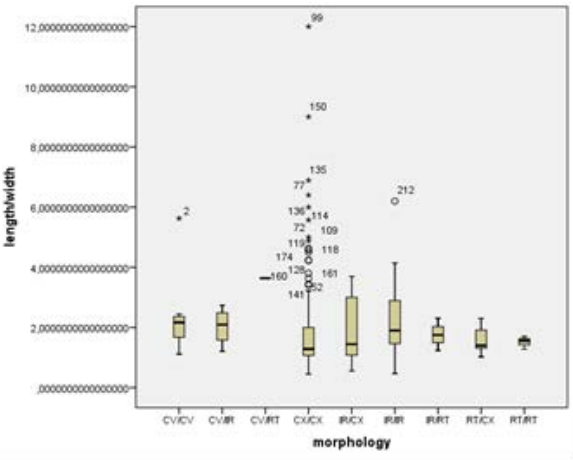


Fig. A5.38. Percentiles distribution of correlation length/width of the active surfaces according to the morphology; N= 240.

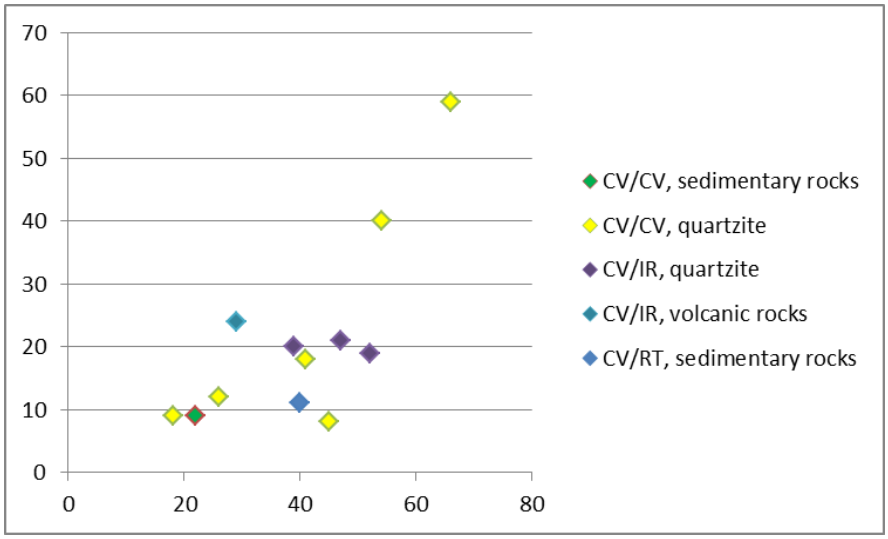


Fig.A5.39. Percussive tools: correlation between the size, concave shapes of the active sides and geology; N= 12

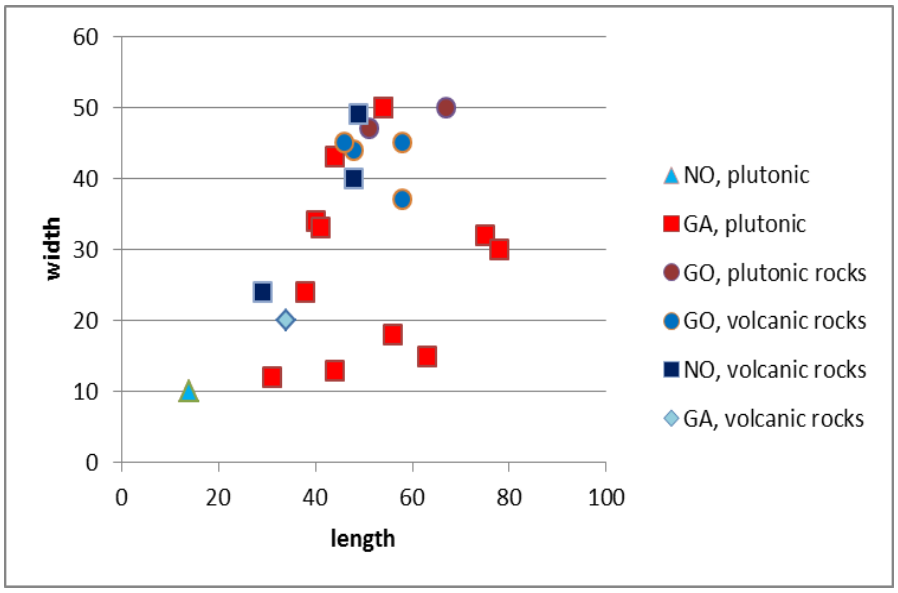


Fig.A5.40. Percussive tools: correlation between the size, irregular shapes of the active sides and geology; N= 35.

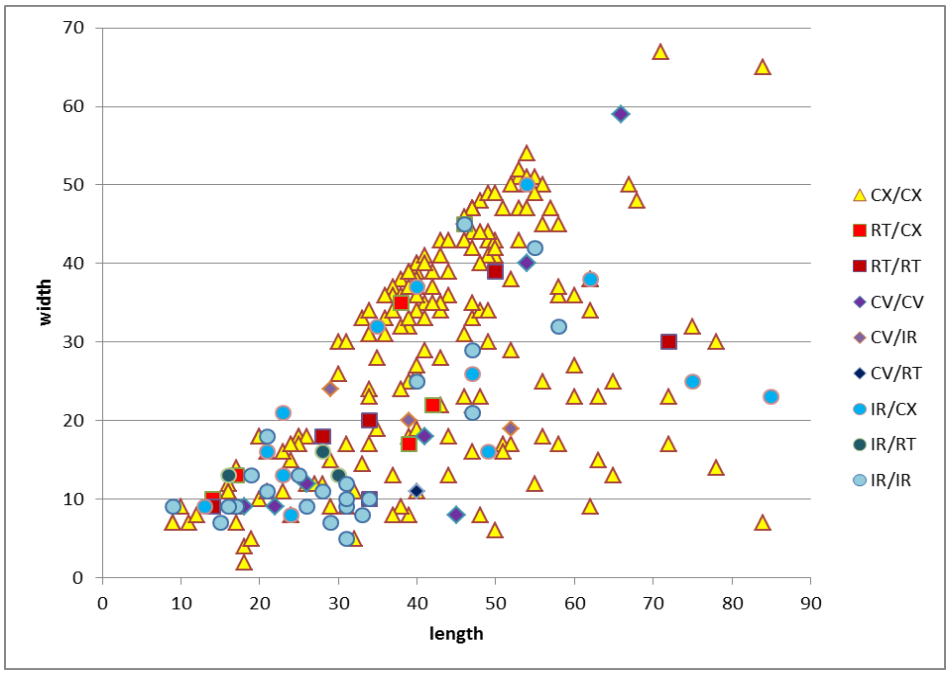


Fig.A5.41. Percussive tools: correlation between the length, width of the active surfaces and morphology; iregular shapes (IR/IR) R^2= 0,5244 and (IR/CX) R^2= - 0,299; convex (CX/CX) shapes R^2= 0,1932; RT/RT: R^2= 0,9296;; N= 242

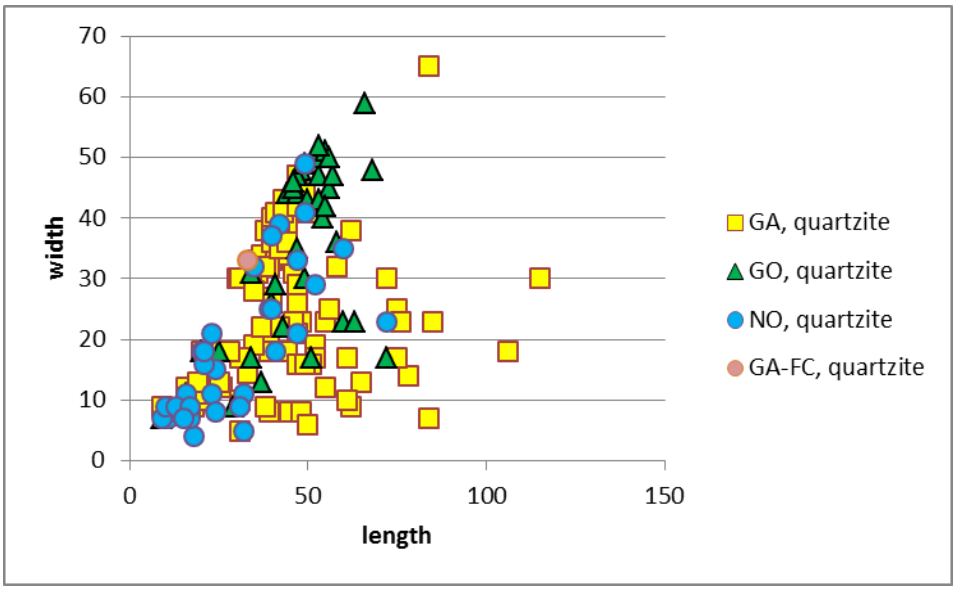


Fig.A5.42. Percussive tools: correlation between the size, use traces of the active sides and quartzite tools; flake negatives (NO) : R^2= 0,4167; dents (GO): R^2= 0,3245; pits: R^2= - 0,24; N= 169.

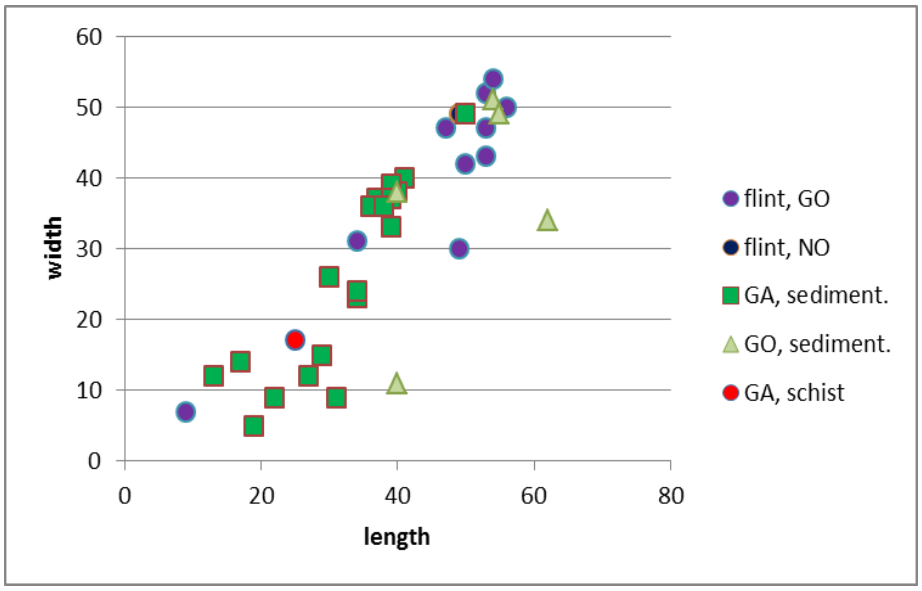


Fig.A5.43. Percussive tools: correlation between the size, use traces of the active sides and sedimentary and shist tools; N= 41.

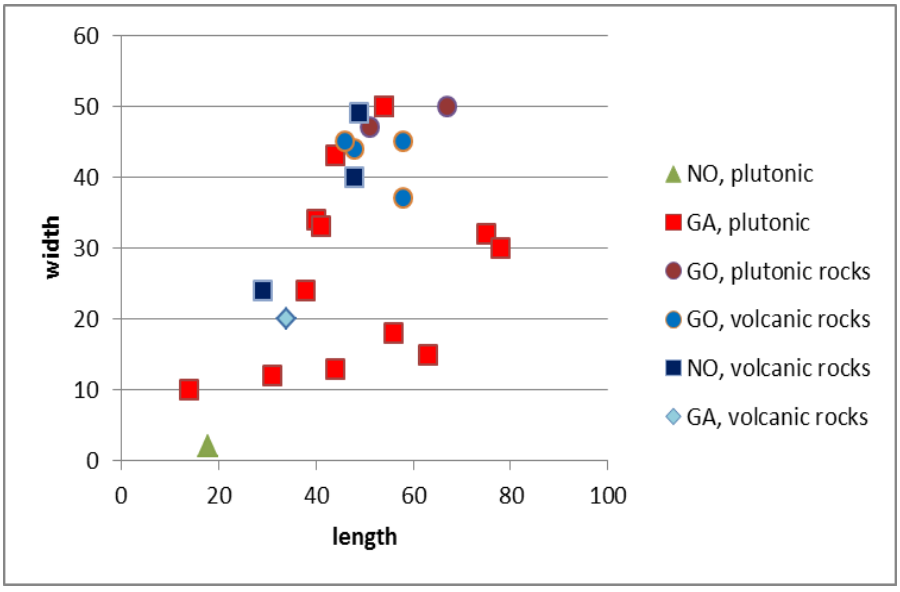


Fig.A5.44. Percussive tools: correlation between the size, use traces of the active sides and igneous tools; N= 27.

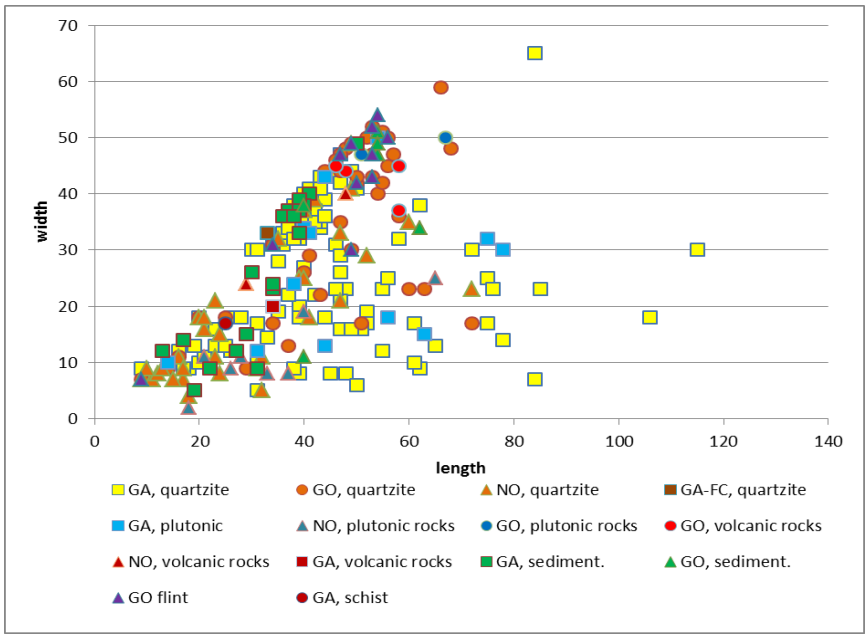


Fig.A5.45. Percussive tools: correlation between the size, use traces of the active sides and geology; N= 237.

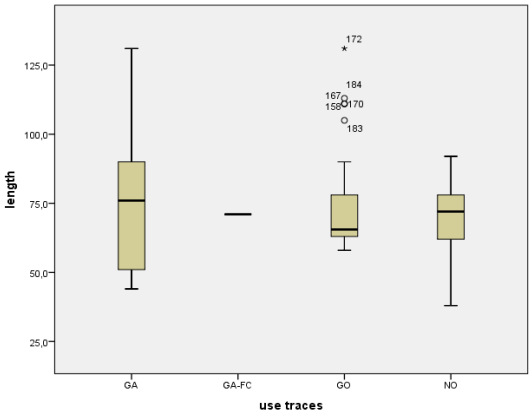


Fig. A5.46. Percentiles distribution of use traces according to the length; N= 253.

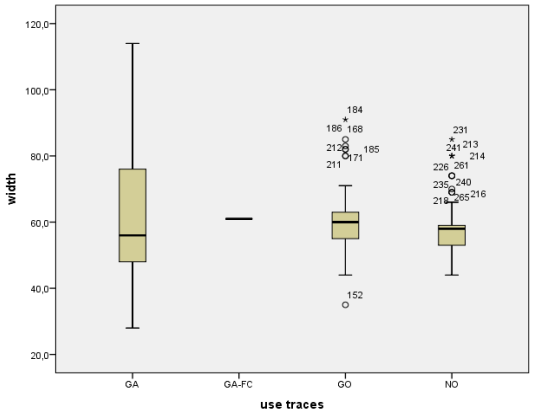
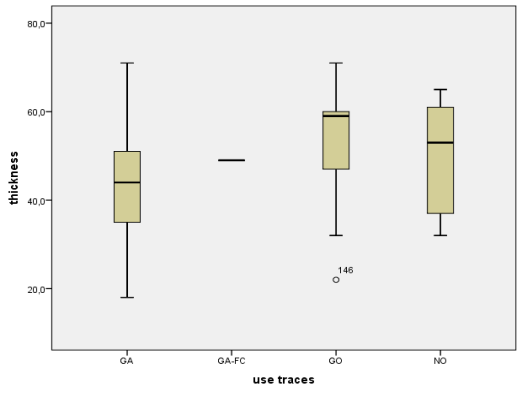


Fig. A5.47. Percentiles distribution of use traces according to the width; N= 279



.Fig. A5.48. Percentiles distribution of use traces according to the thickness; N= 274

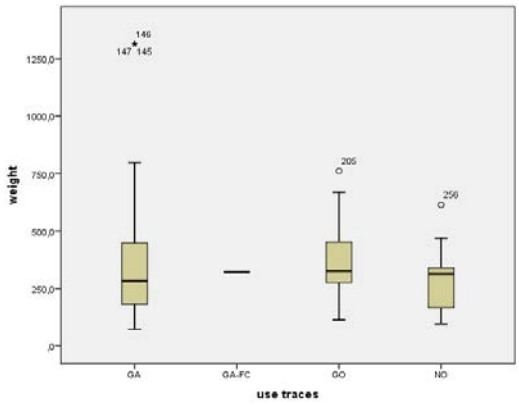


Fig.A5.49. Percentiles distribution of use traces according to the weight; N= 256.

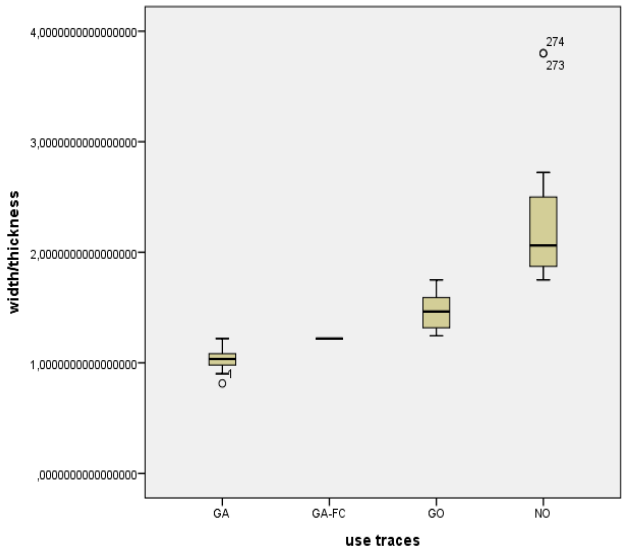
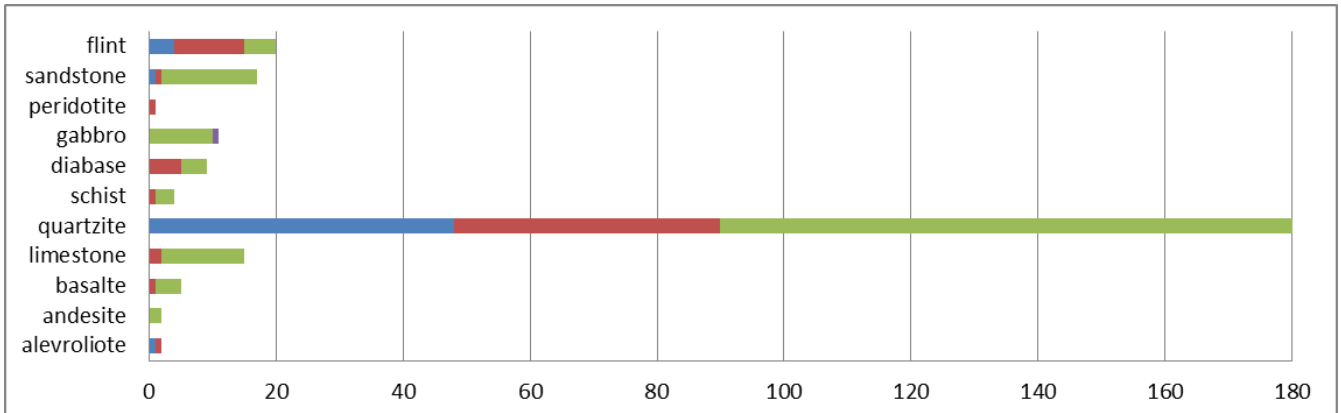


Fig.A5.50. Percentiles distribution of use traces according to realtion width/thickness; N= 274.



	alevroliote	andesite	basalte	limestone	quartzite	schist	diabase	gabbro	peridotite	sandstone	flint
NO	1				48					1	4
GO	1		1	2	42	1	5		1	1	11
GA		2	4	13	103	3	4	10		15	5
GA-FC								1			

Fig.A5.51. Percussive tools: use traces according to geology; N= 279.

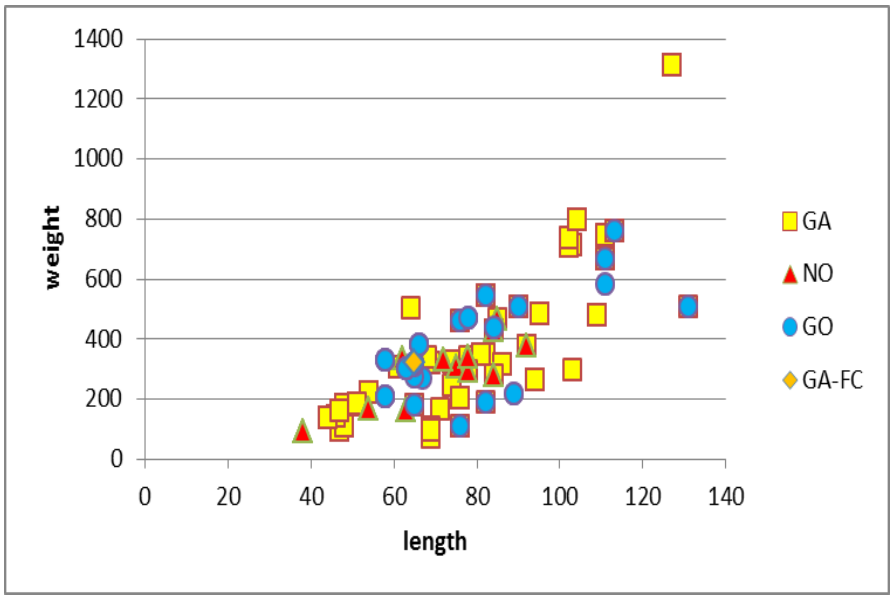


Fig.A5.52. Percussive tools: correlation between the length,weight and use traces; GA: R^2= 0,5578; NO: R^2= 0,433; GO: R^2= 0,4424;NO= 0,6704; N= 252 .

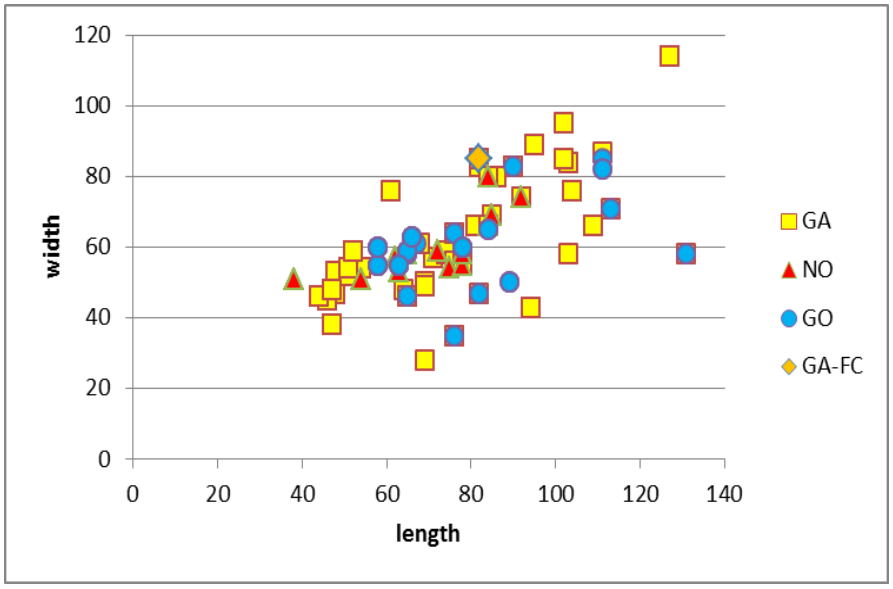


Fig.A5.53. Percussive tools: correlation between the length, width and use traces; GA: R^2= 0,3648;GO= -0,992; N= 252.

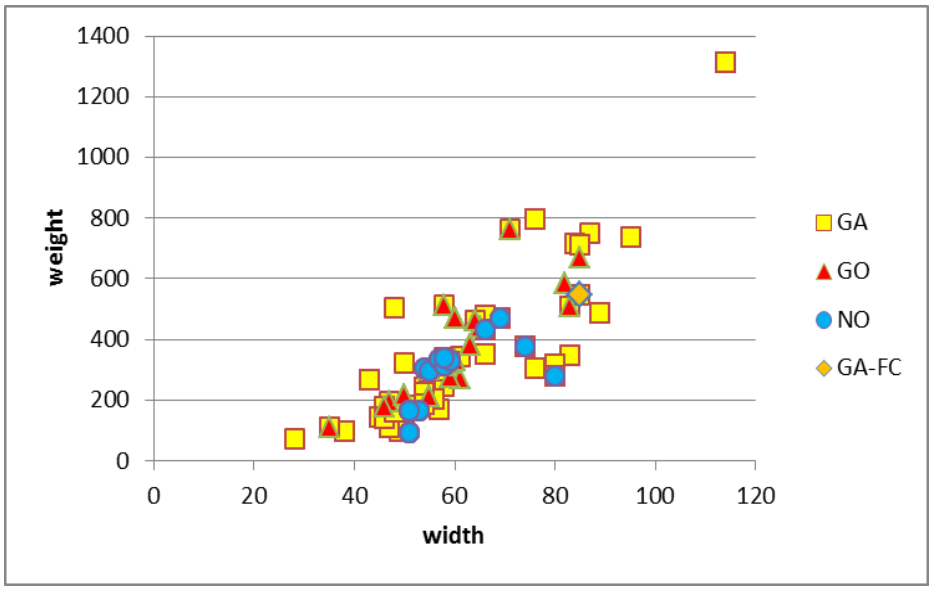


Fig.A5.54 Percussive tools: correlation between the width, weigh t and use traces; GA: R^2= 0,5651; NO: R^2= 0,5414; GO: R^2= 0,4075; N= 255.

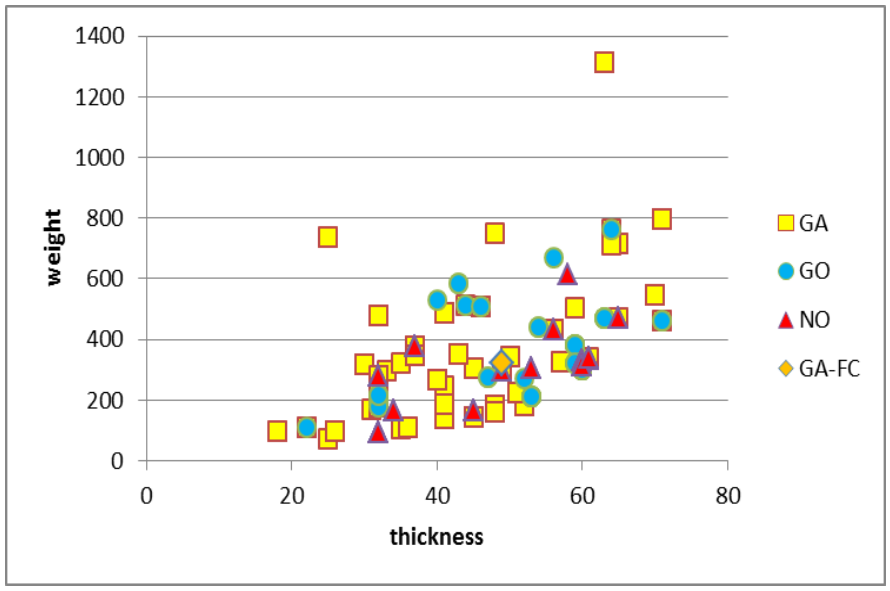


Fig.A5.55. Percussive tools: correlation between the thicknes, weigh t and use traces; GA: R^2= 0,2922; NO: R^2= 0,4804; N= 249.

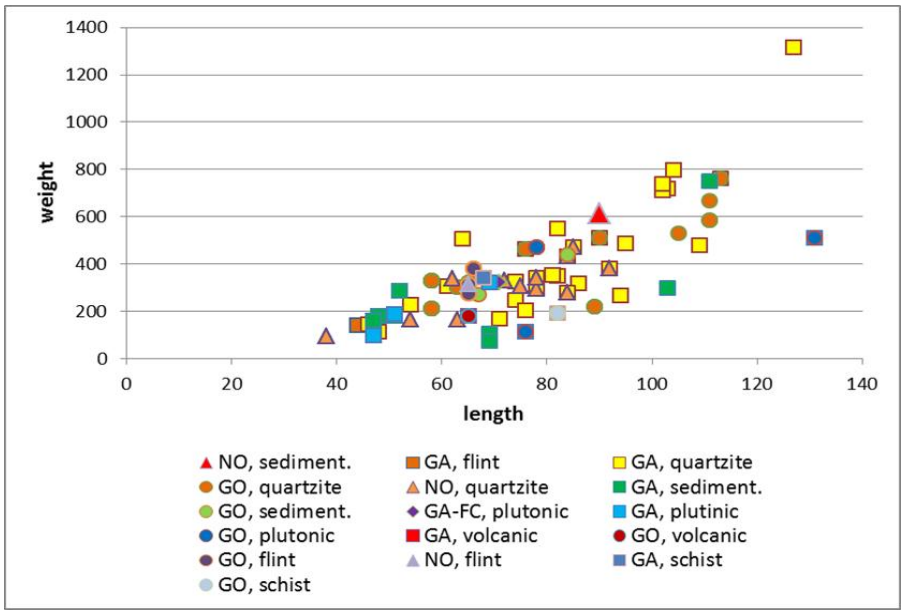


Fig.A5.56. Percussive tools: correlation between length, weight, use traces and geology; quartzite: GA: R²= 0,5206, GO: R²= 0,5679, NO= R²=

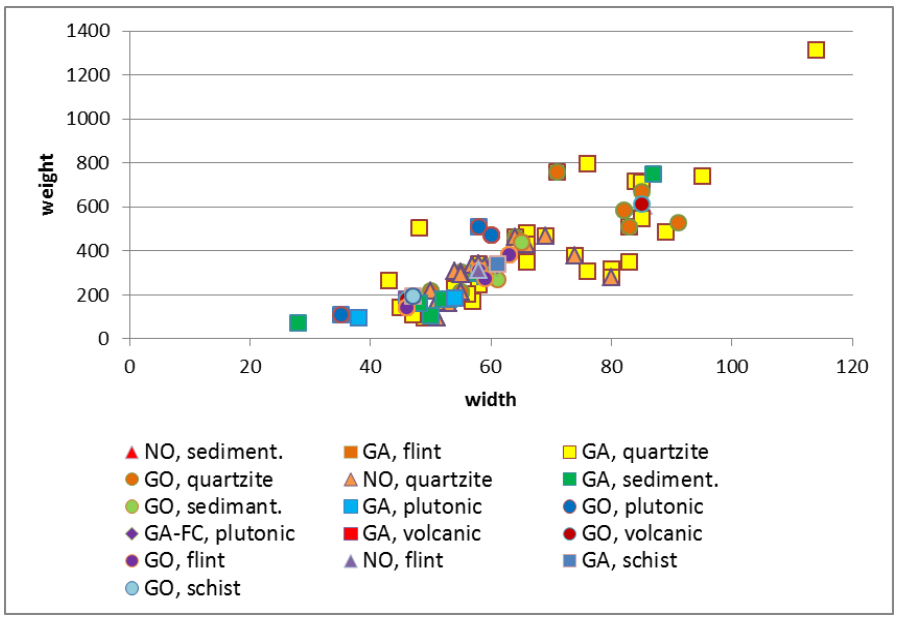


Fig.A5.57. Percussive tools: correlation between width, weight, use traces and geology; quartzite: quartzite: GA, R²= 0,4857, GO: R²= 0,5574; NO: R²= 0,3107; sedimentary rocks: R²= 0,4821; plutonic rocks: GA: R²= 0,3073; N= 255.

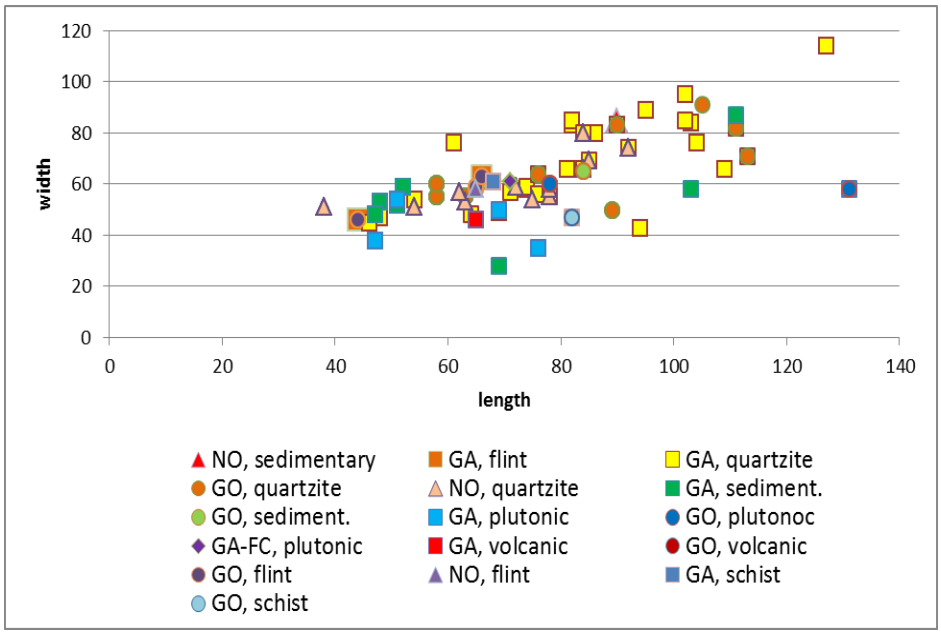


Fig.A5.58. Percussive tools: correlation between length, width, use traces and geology; quartzite: GA: R^2= 0,4758, GO: R^2= - 0,257, NO= - 0,14;; N= 253.

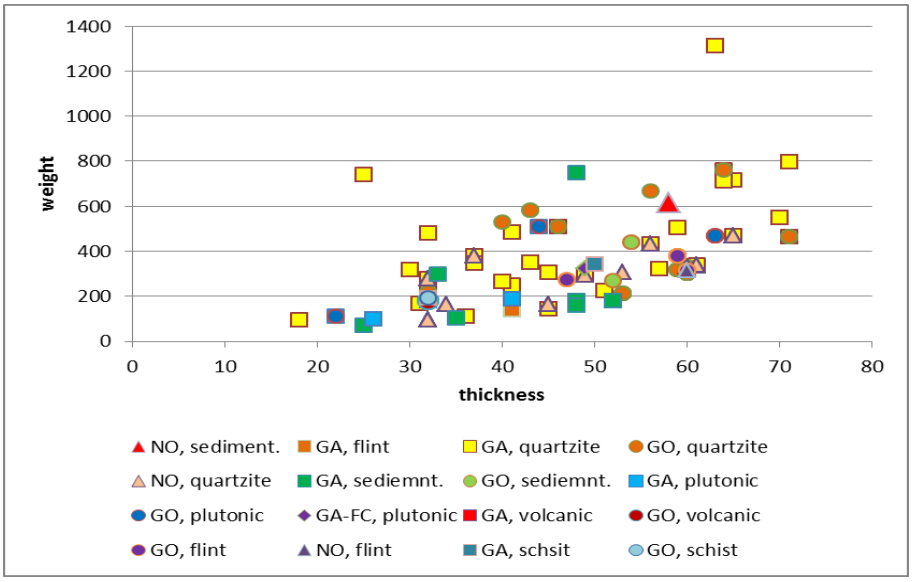


Fig.A5.59. Percussive tools: correlation between thickness, weight, use traces and geology; quartzite: GA, R^2= 0,3127; N= 2249.N= 255.

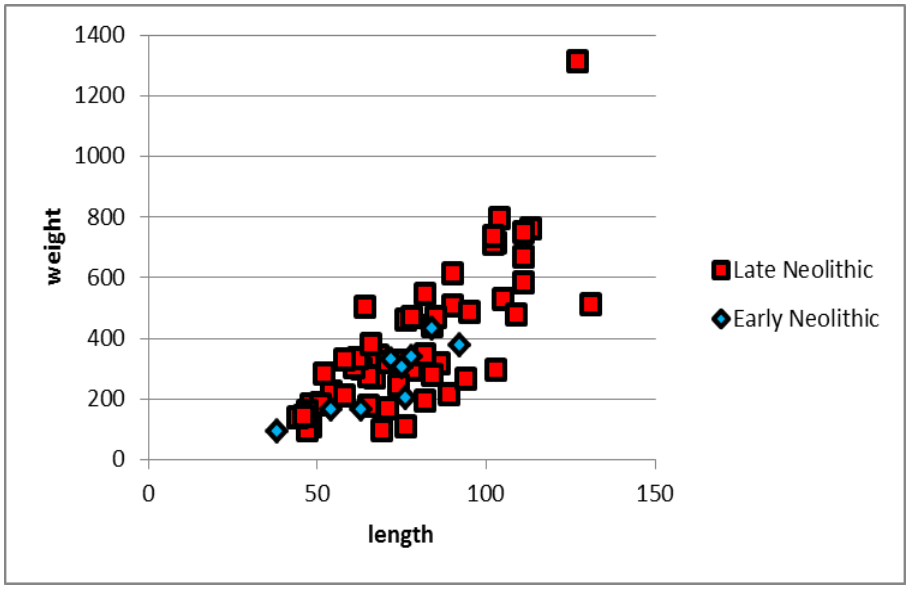


Fig.A5.60. Percussive tools: correlation between length and weight of the Early and Late Neolithic; N= 69.

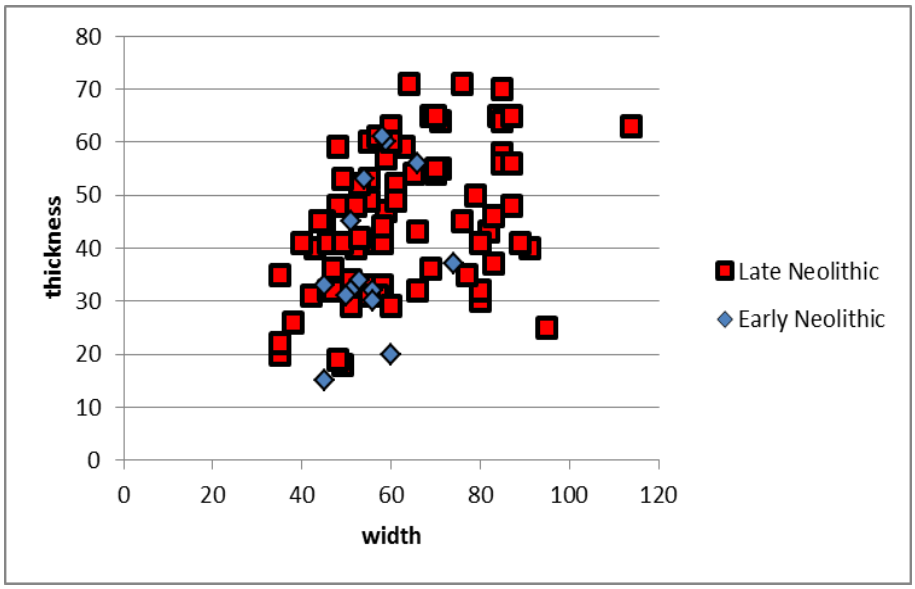


Fig.A5.61. Percussive tools: correlation between width and thickness of the Early and Late Neolithic; N= 82.

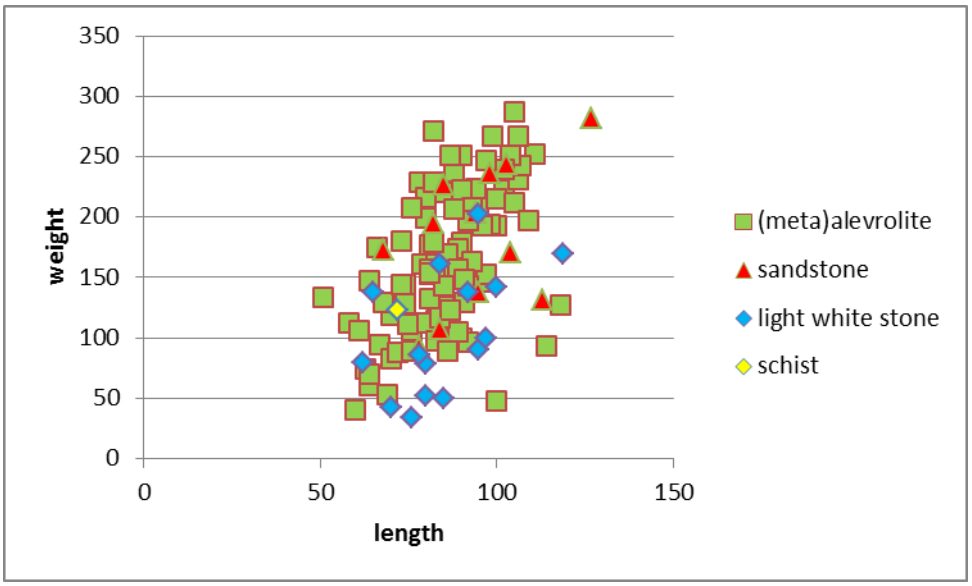


Fig..A A5.62. RPE tools: correlation between length, weight and geology; meta-alevrolite: R^2= 0,2647; N=120.

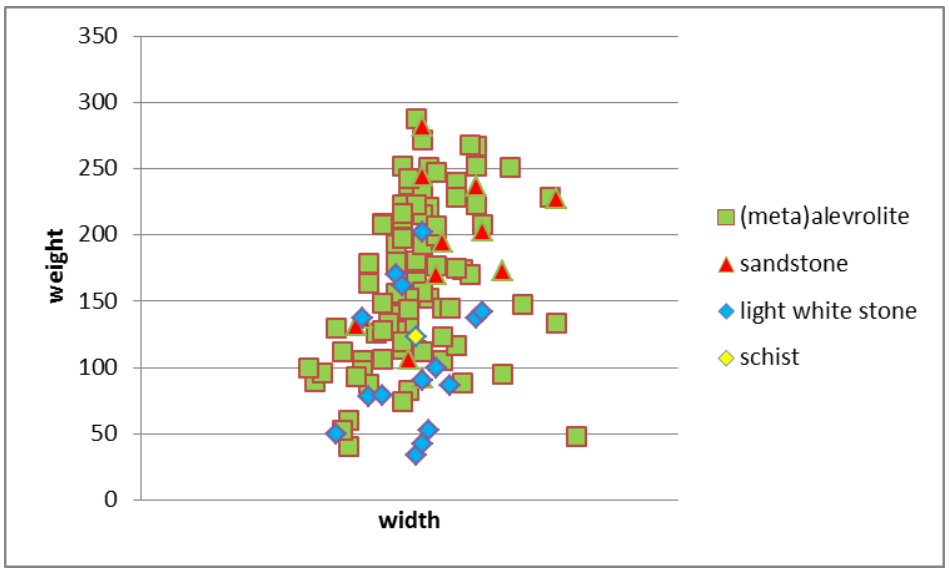


Fig..A A5.63. RPE tools: correlation between width, weight and geology; N=120.

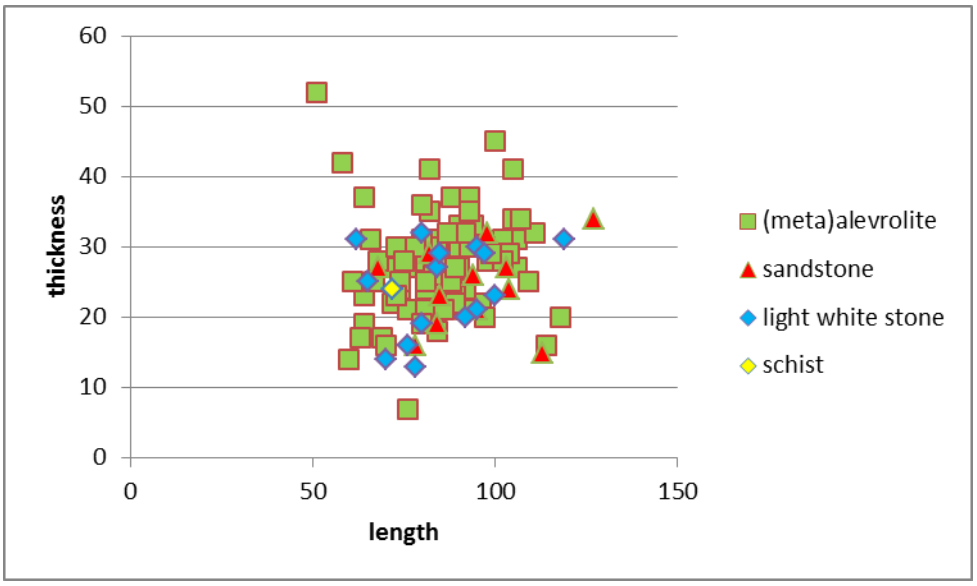


Fig..A A5.64. RPE tools: correlation between length, thickness and geology; N=120.

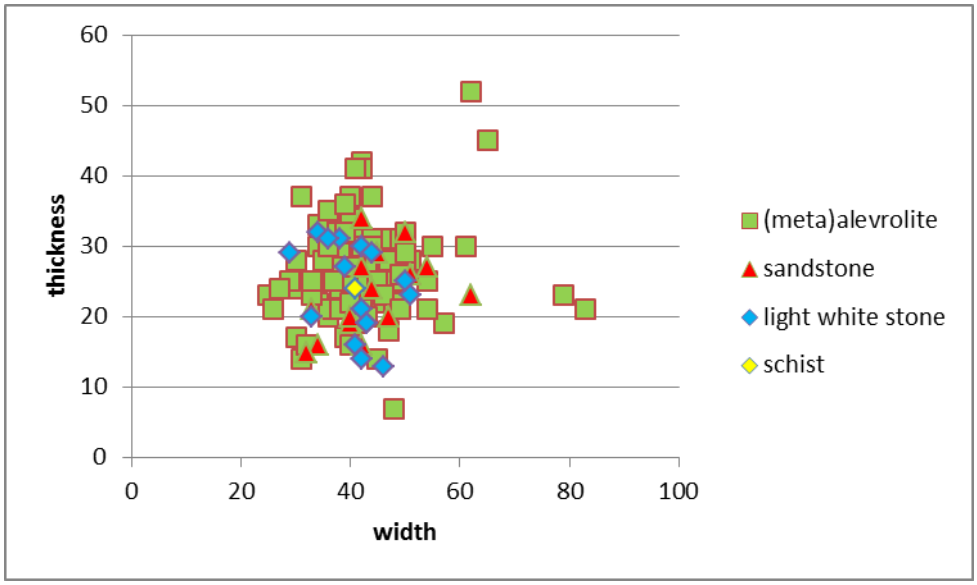


Fig..A A5.65. RPE tools: correlation between width, thickness and geology; meta-alevrolite R^2= -0,528; N=127.

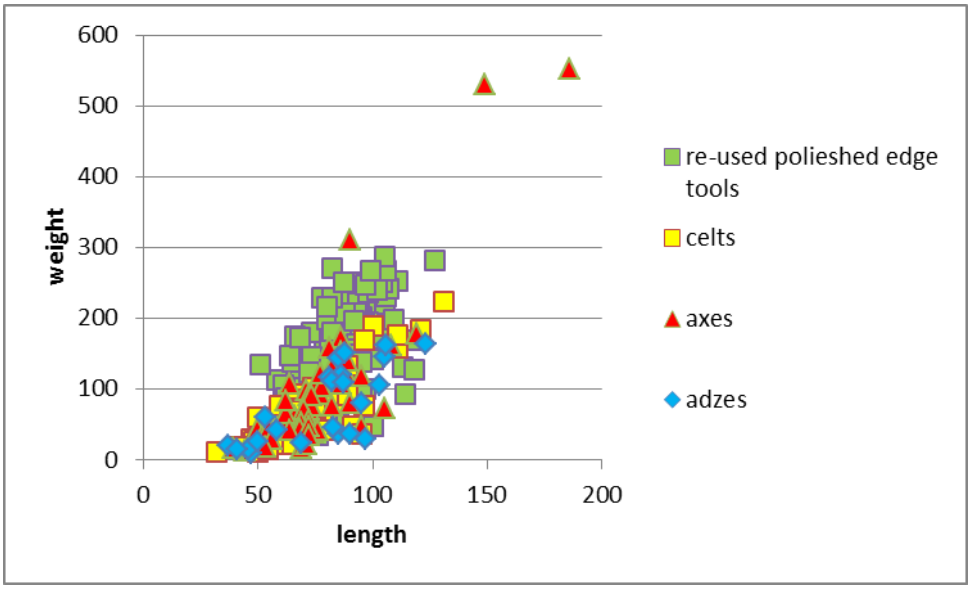


Fig..A A5.66. RPE & TPE tools: a correlation of length and weight; N= 168.

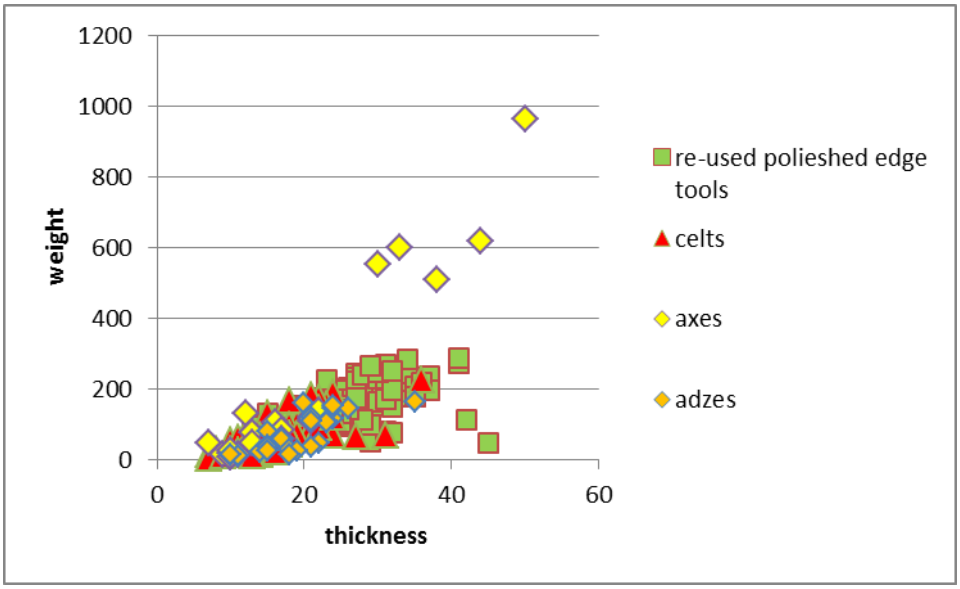


Fig..A A5.67. RPE & TPE tools: a correlation of thickness and weight; N= 168.

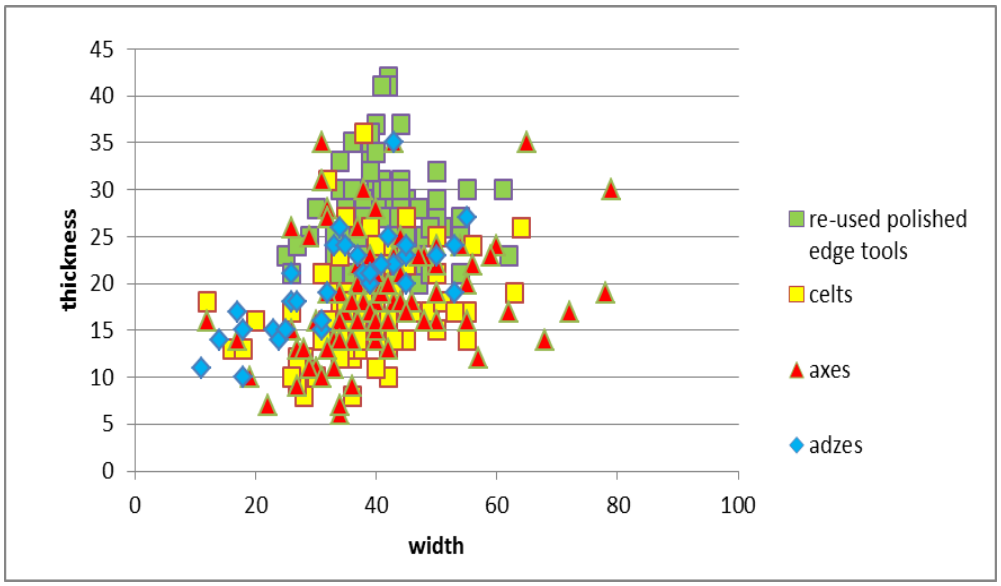


Fig..A A5.68. RPE & TPE tools: a correlation of width and thickness; N= 309.

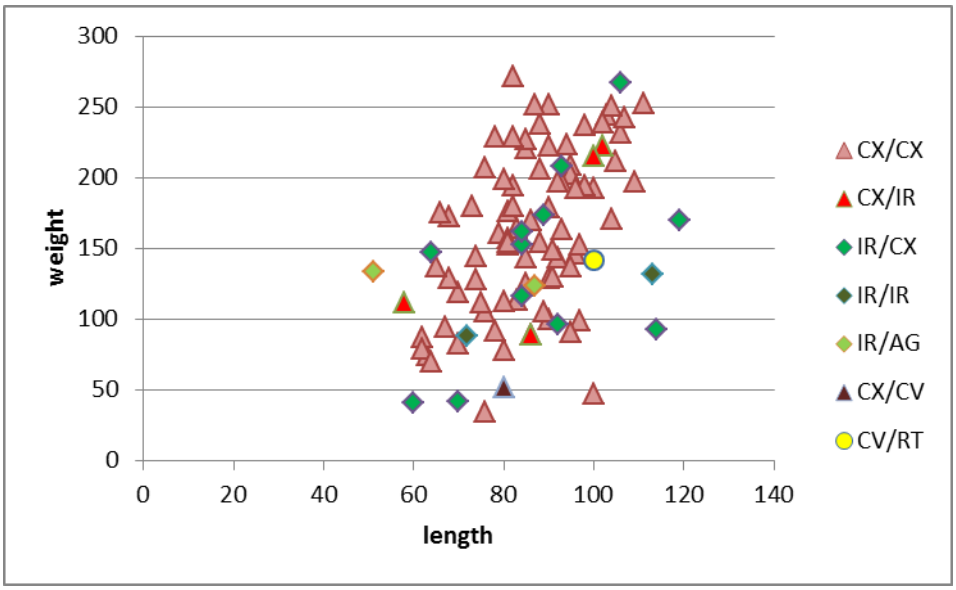


Fig..A A5.69. RPE tools: correlation between length, weight and morphology of the top side; N=94.

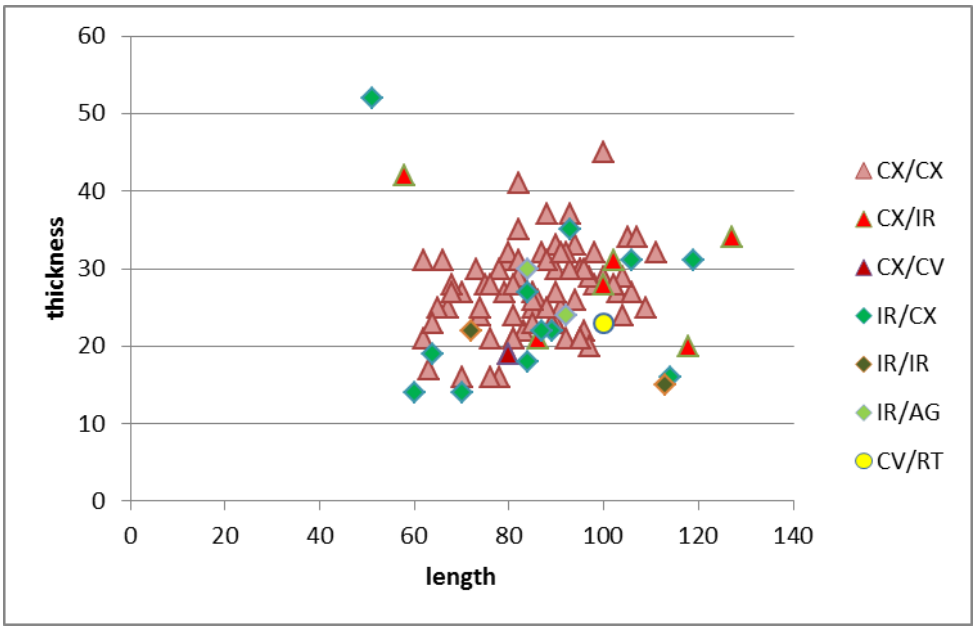


Fig..A A5.70. RPE tools: correlation between length, thickness and morphology of the top side; N=94.

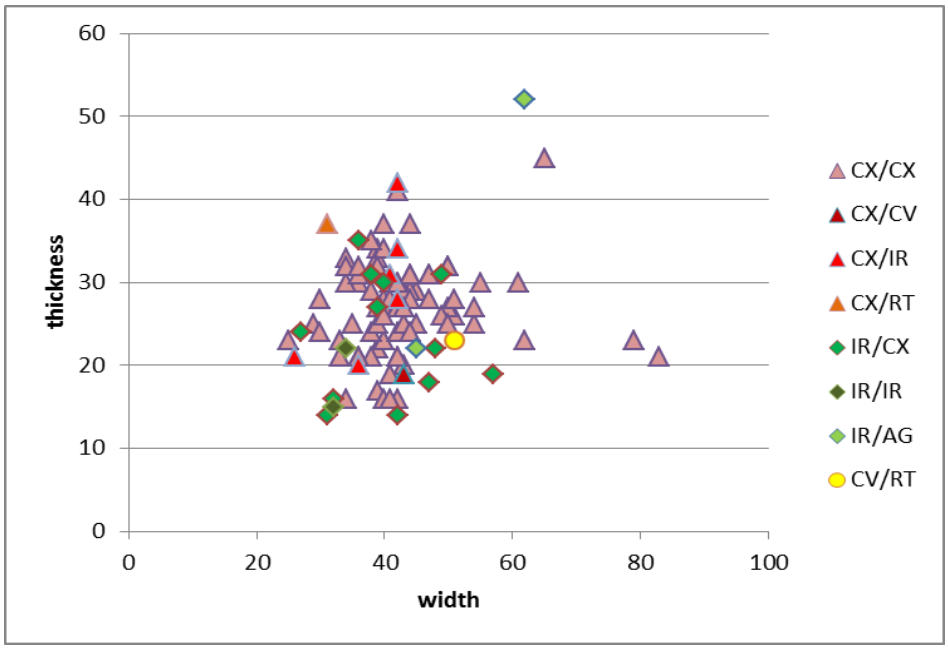


Fig..A A5.71. RPE tools: correlation between length, thickness and morphology of the bottom side; N=105.

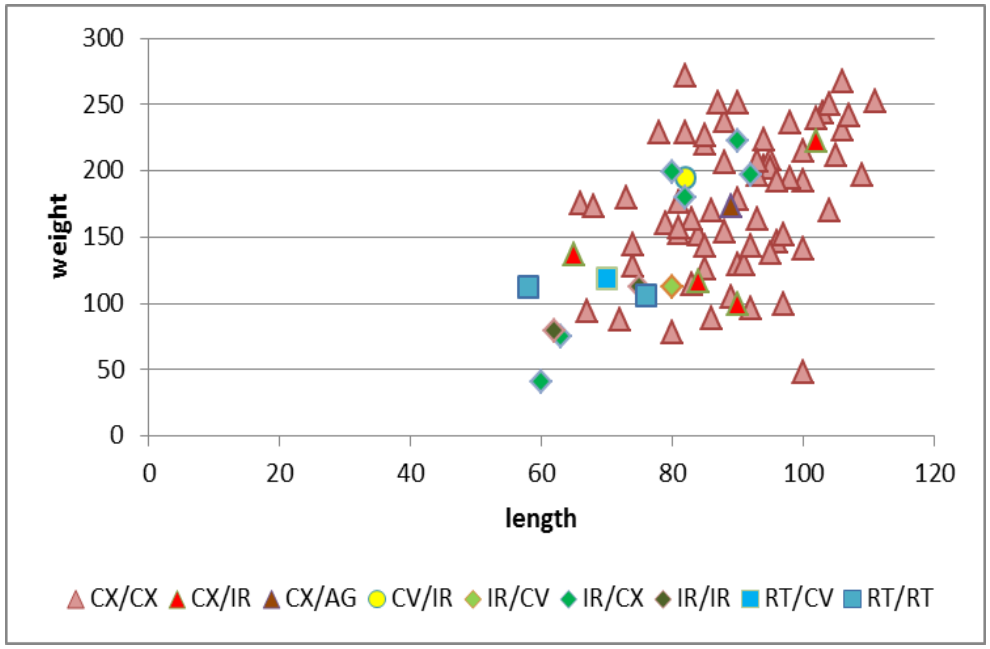


Fig..A A5.72. RPE tools: correlation between length, weight and morphology of the bottom side; N=85.

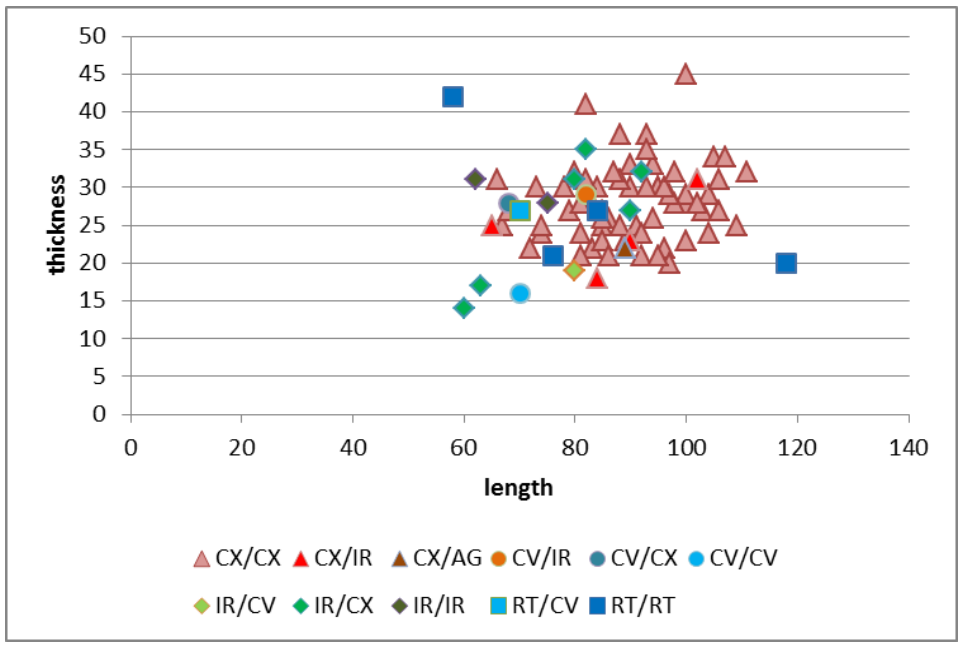


Fig..A A5.73. RPE tools: correlation between length, thickness and morphology of the bottom side; N=85.

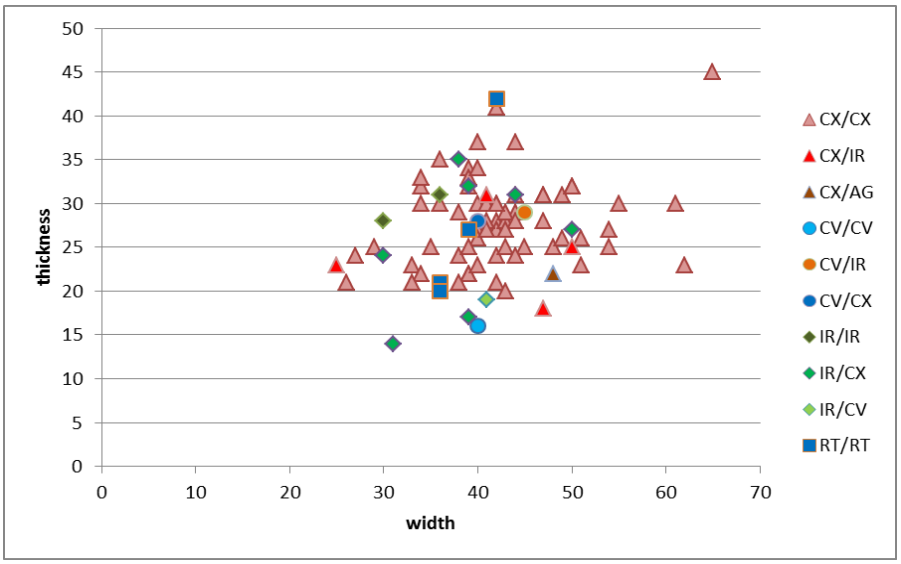


Fig..A A5.74. RPE tools: correlation between width, thickness and morphology of the bottom side; N=89.

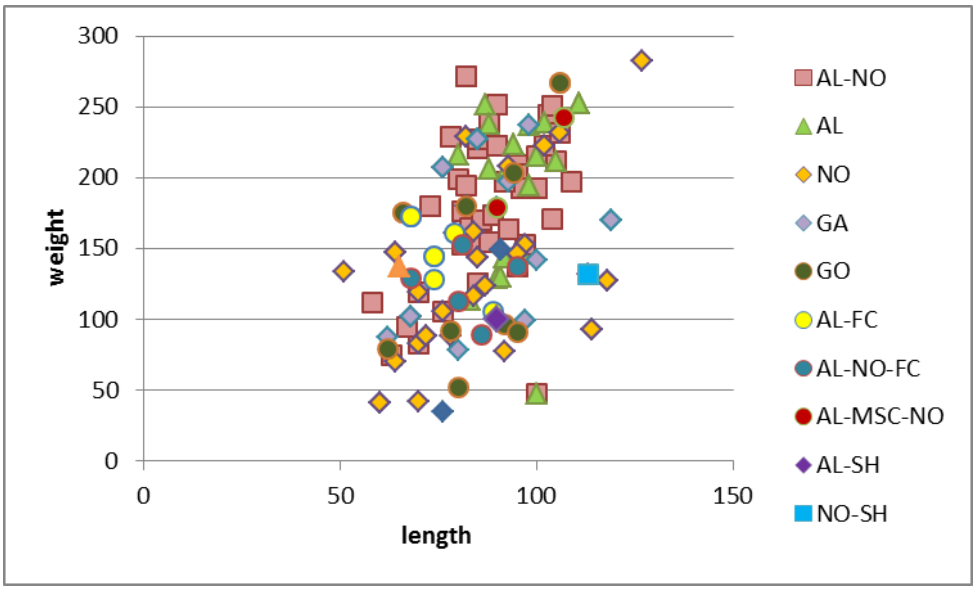


Fig..A A5.75. RPE tools: correlation between length, weight and use traces; N=166.

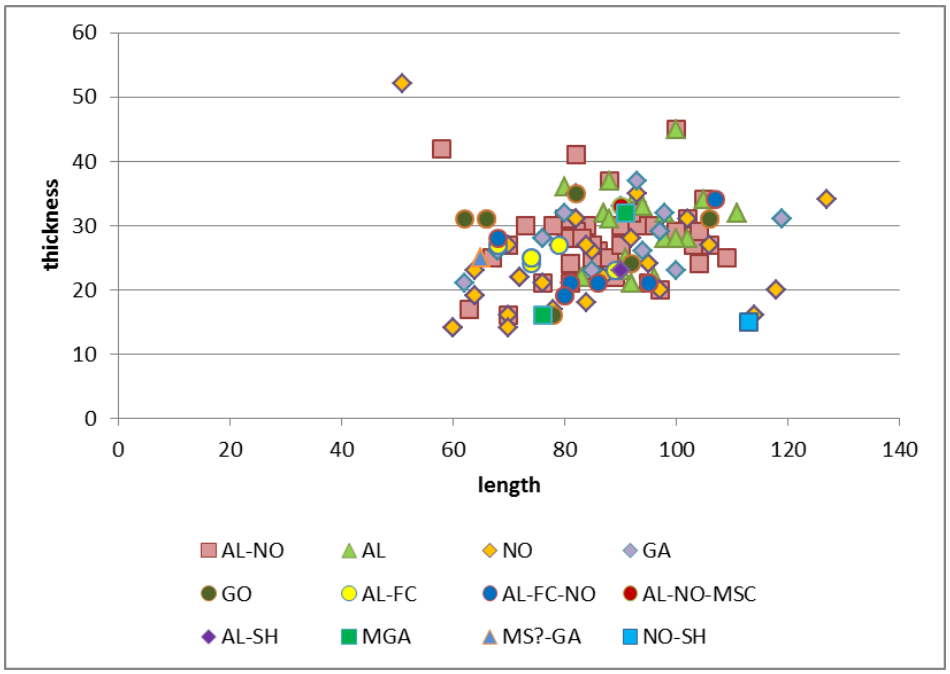


Fig..A A5.76. RPE tools: correlation between length, thickness and use traces; N=166.

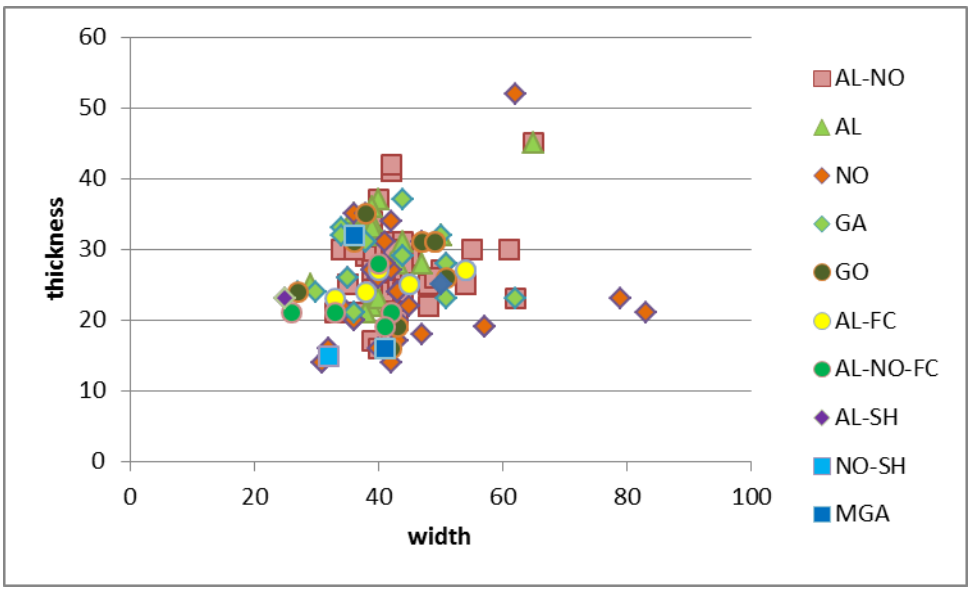


Fig..A A5.77. RPE tools: correlation between width, thickness and use traces; N=172

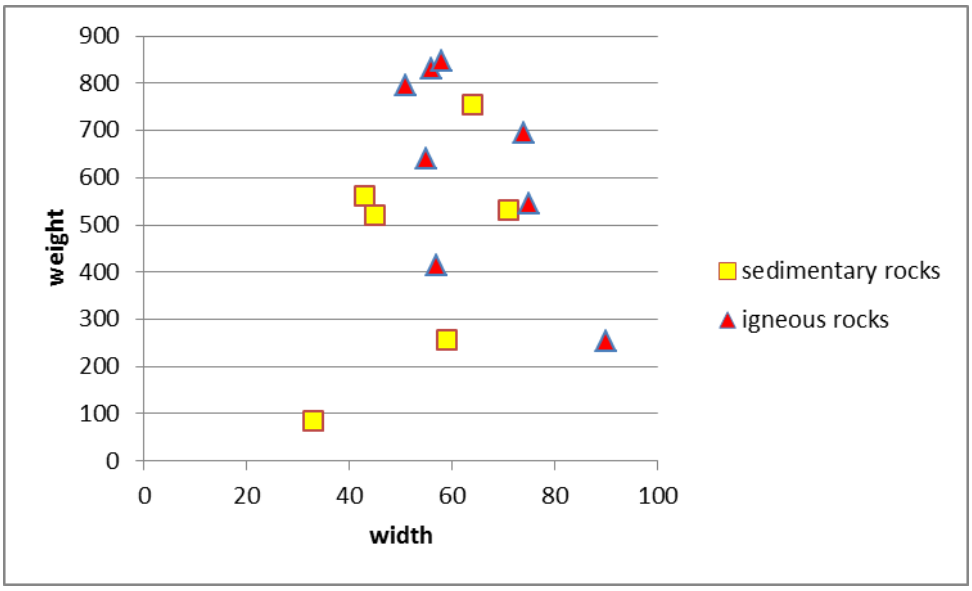


Fig.A 5.78. Hammers: correlation between the width, weight and geology; sandstone: N= 14.

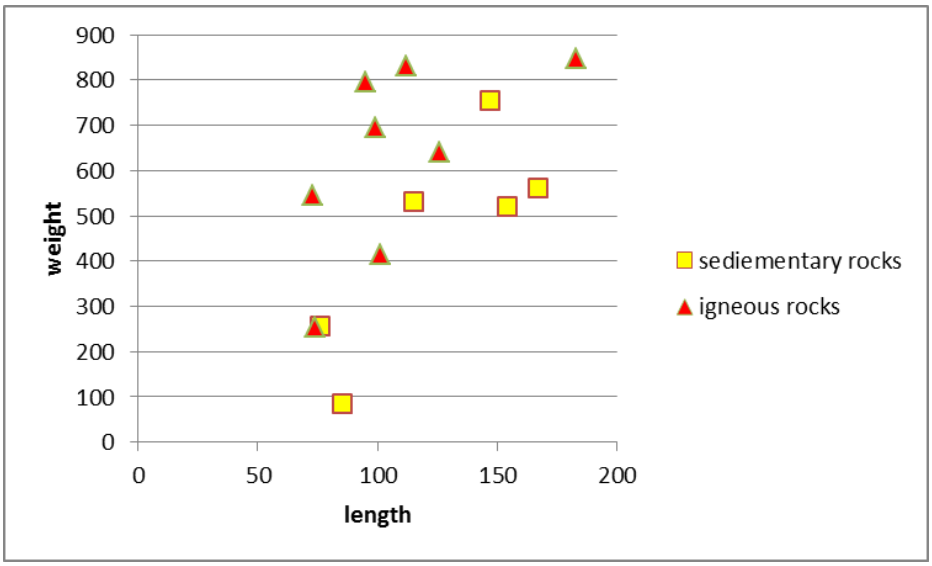


Fig.A 5.79. Hammers: correlation between the length, weight and geology; sedimentary rocks:R^2 = 0,6022; N= 14.

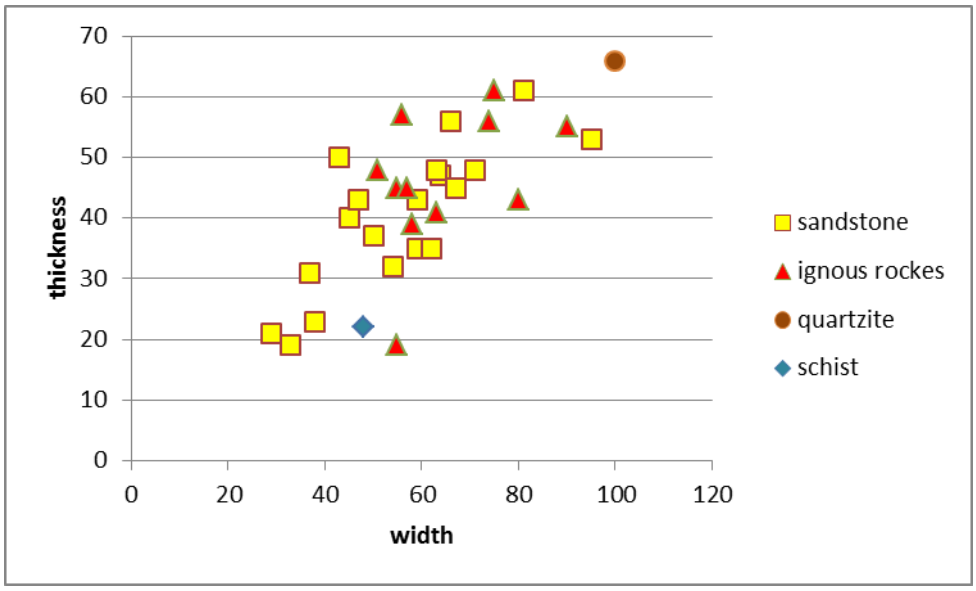


Fig.A5.80. Hammers: correlation between the width, thickness and geology; sandstone:R^2 = 0,5574; N= 32.

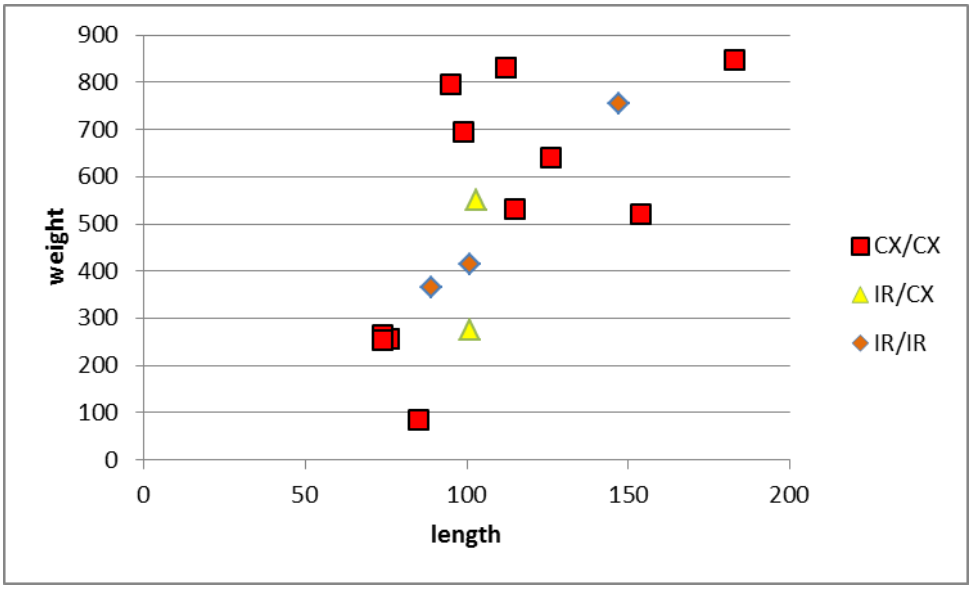


Fig.A5.80. Hammers: correlation between the length, weight and morphology; N= 19.

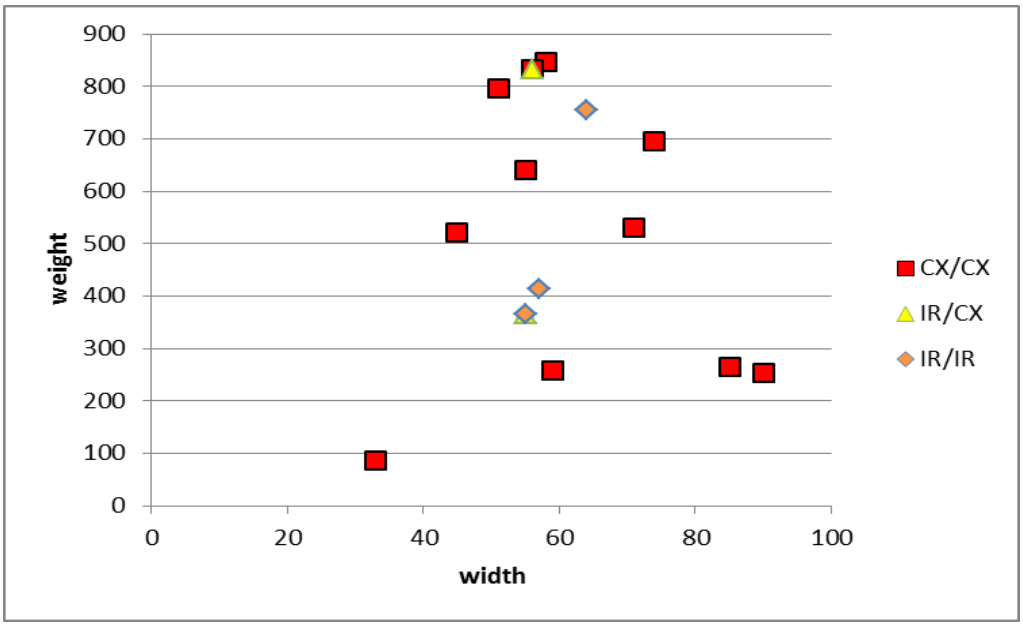


Fig.A5.81. Hammers: correlation between the width, weight and morphology; N= 19.

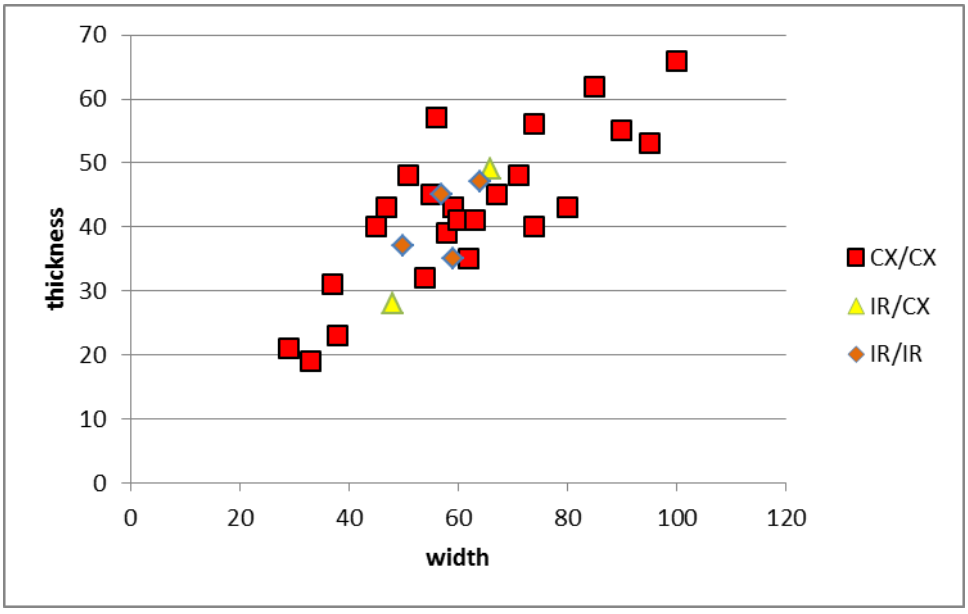


Fig.A5.82. Hammers: correlation between the width, thickness and morphology; $R^2 = 0,5066$ N= 32.

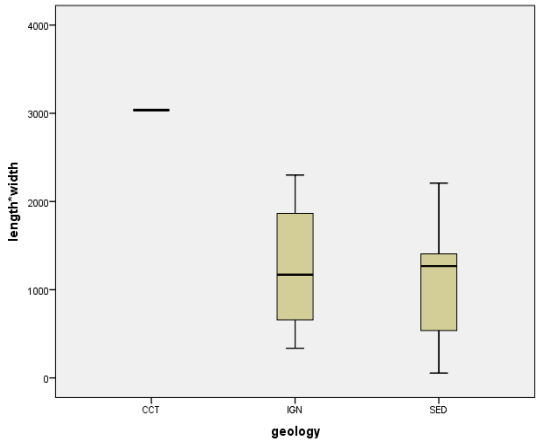


Fig.A5.83. Percentiles distribution of the of the size of the active sides of the hammers according geology; N=32.

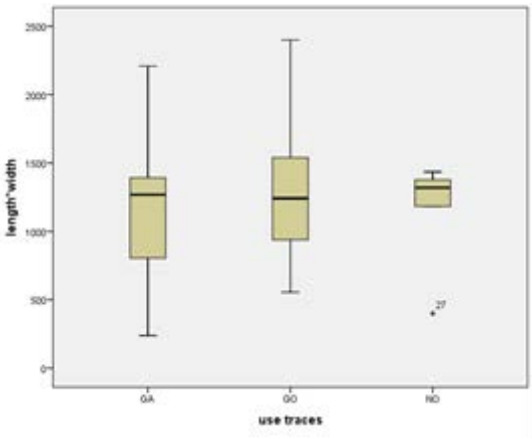


Fig.A5.84. Percentiles distribution of the of the size of the active sides of the hammers according use traces; N= 30

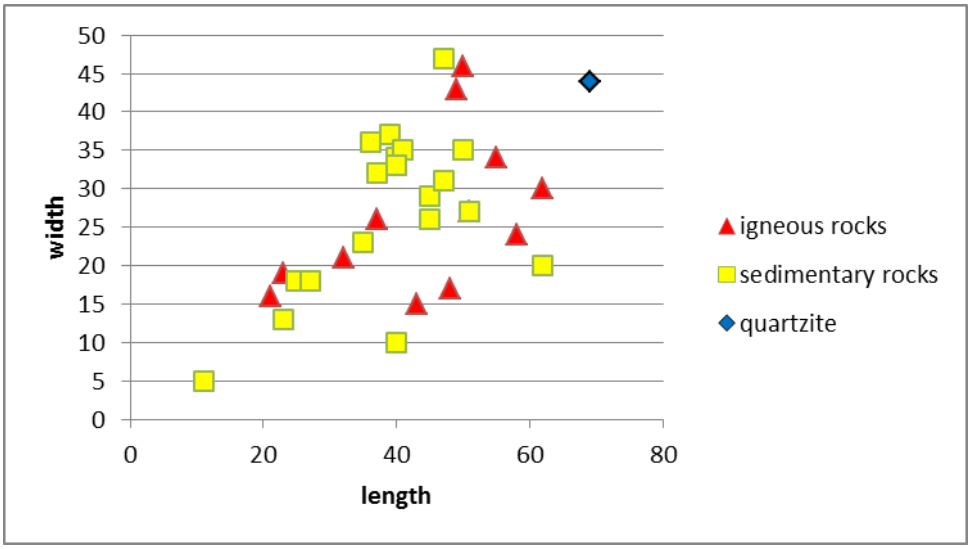


Fig.A5.85. Hammers: correlation between the size of the active surfaces and geology;N= 32.

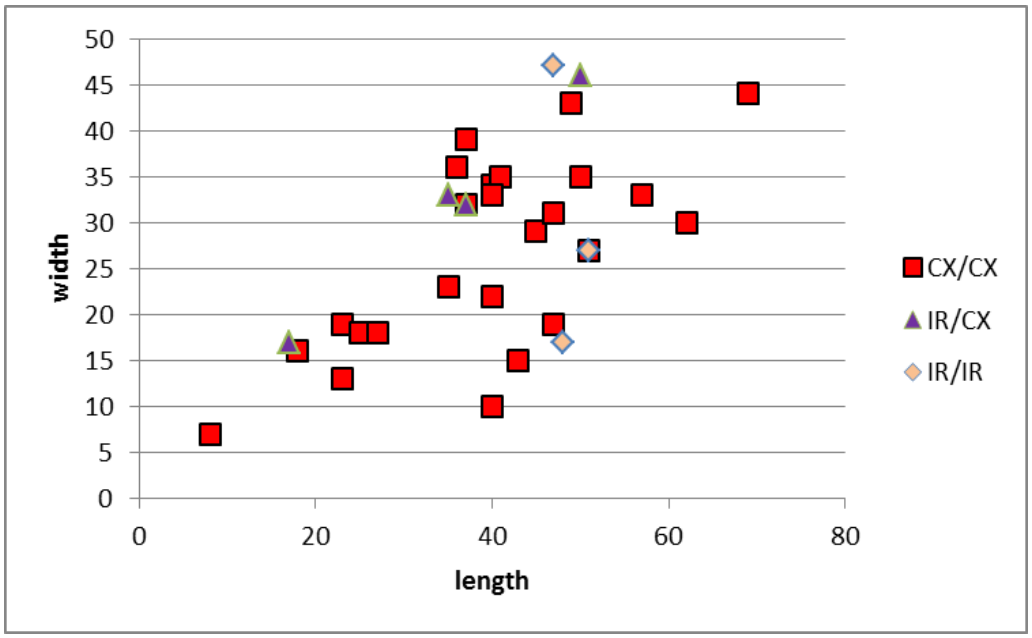


Fig.A5.86. Hammers: correlation between the size of the active surfaces and morphology; IR/CX: R^2= 0.9845; N= 32.

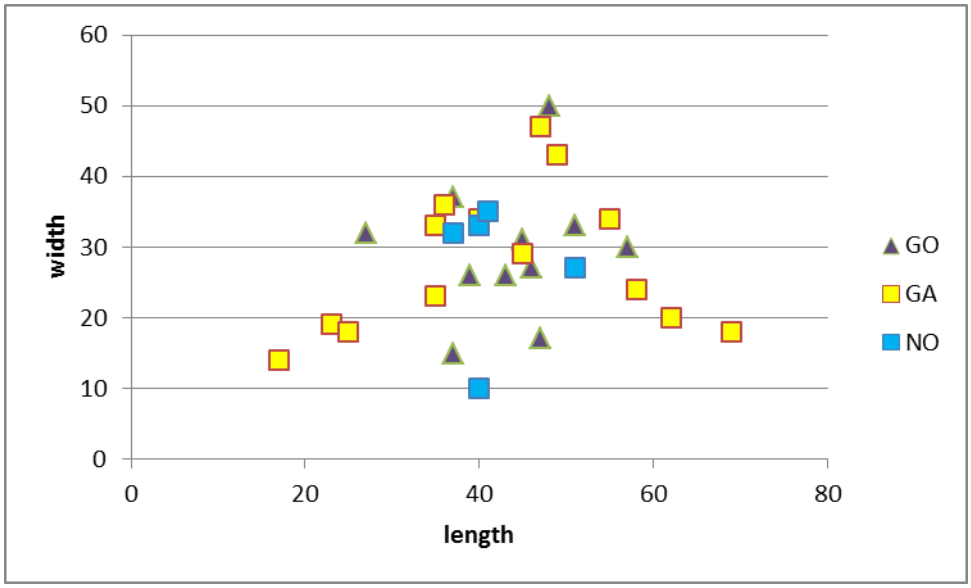


Fig.A5.87. Hammers: correlation between the size of the active surfaces and use traces; N= 30.

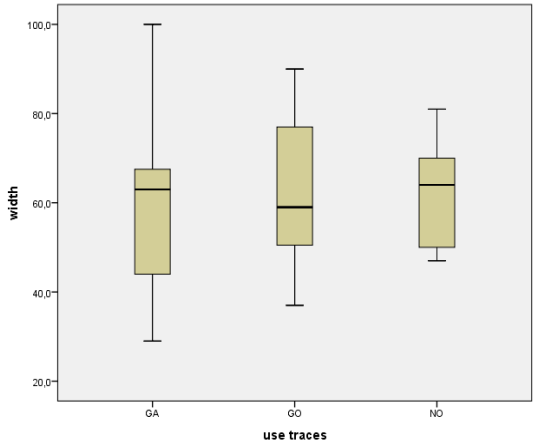


Fig.A5.88. Percentiles distribution of the width of the 50% to fully preserved hammers according use traces; N=45.

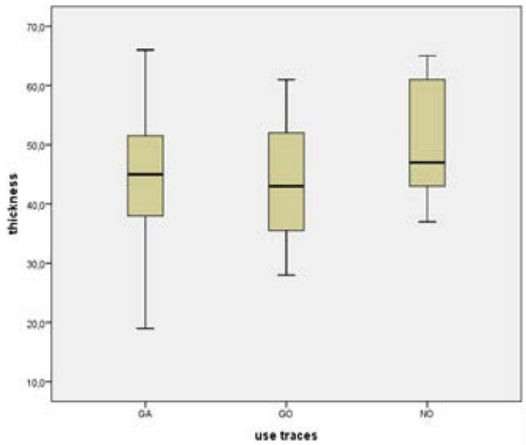


Fig.A5.89. Percentiles distribution of the thickness of the 50% to fully preserved hammers according use traces; N=43.

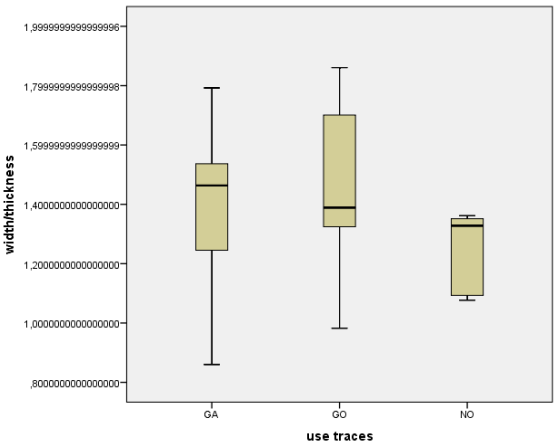


Fig.A5.90. Percentiles distribution of the relation width/ thickness of the 50% to fully preserved hammers according use traces; N=43.

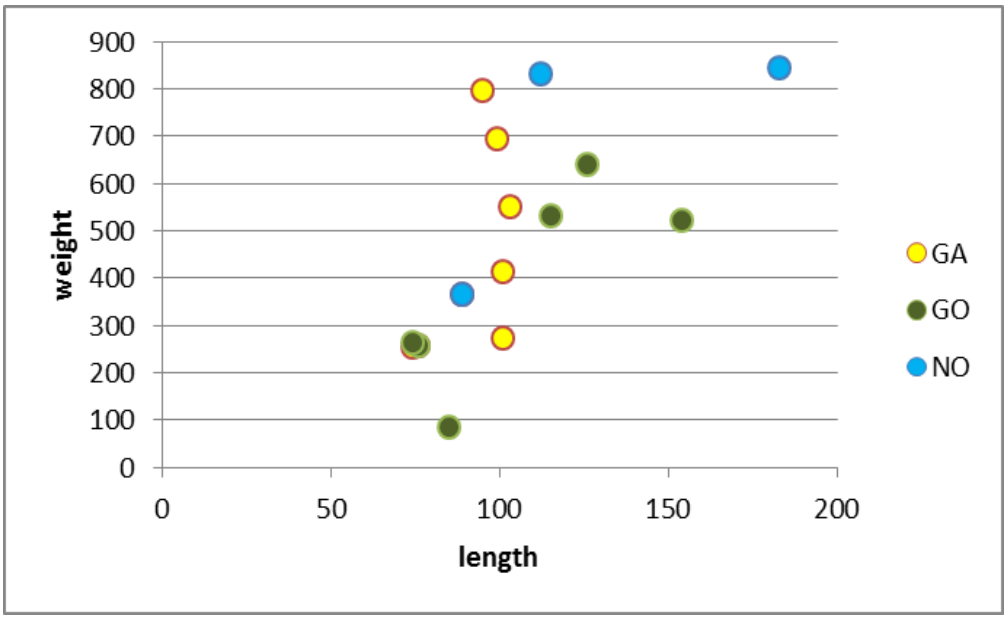


Fig.A5.91. Hammers: correlation between the length, weight and use traces; N= 19.

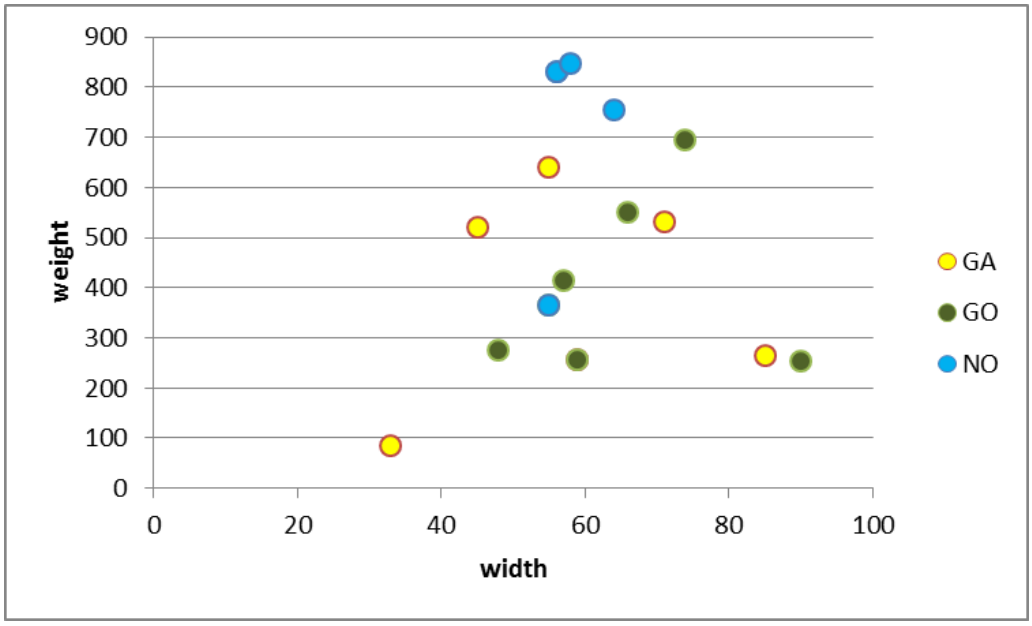


Fig.A5.92. Hammers: correlation between width, weight and use traces; N= 19

s

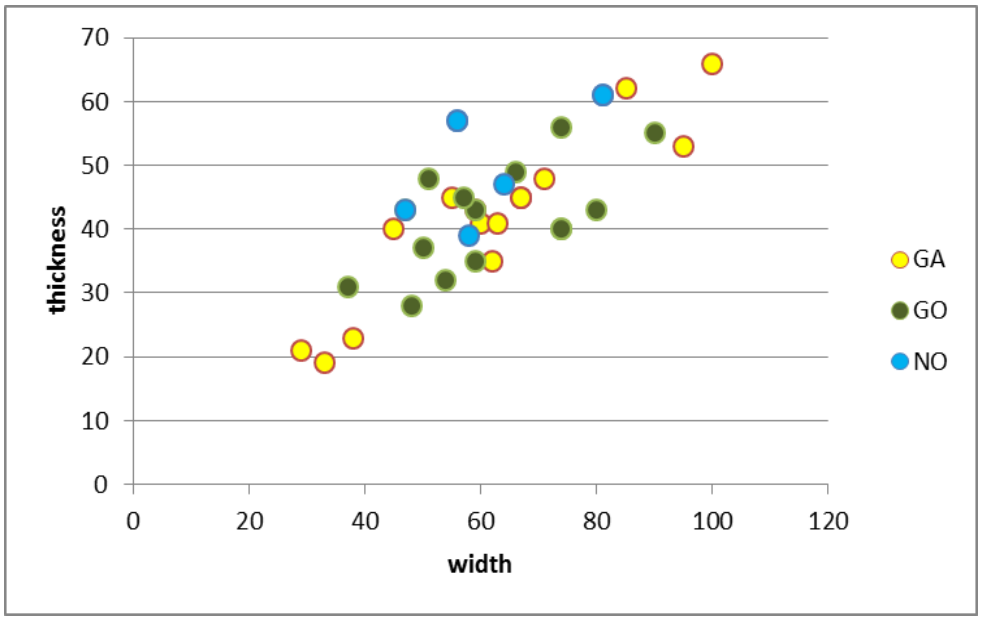


Fig.A 5.93. Hammers: correlation between the width, thickness and use traces; GA; R^2= 0,668; GO=0,6632 N= 32

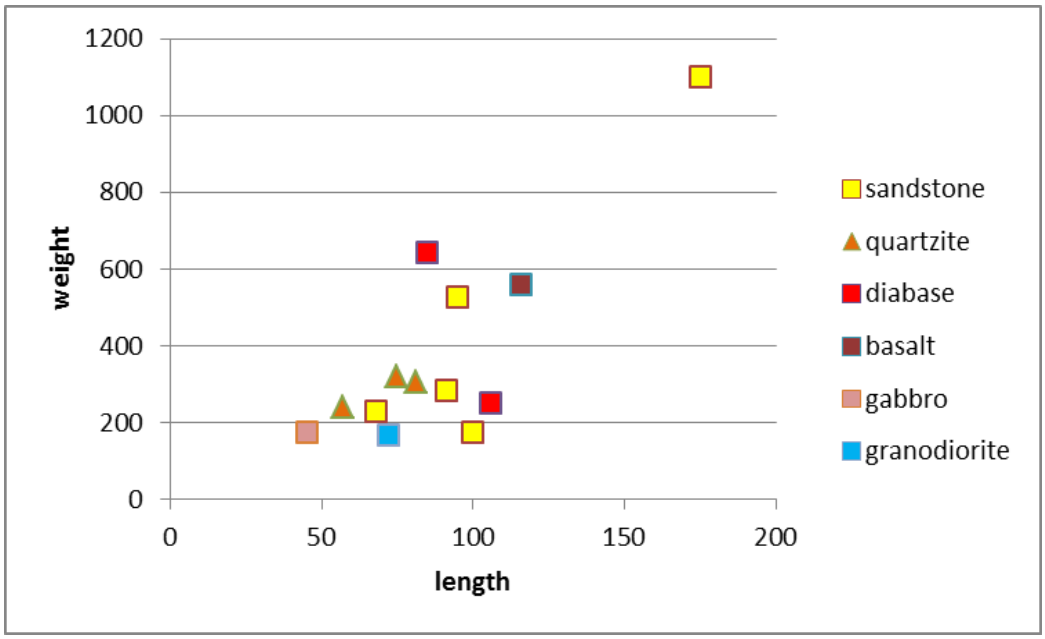


Fig..A5.94. Pestles: correlation of length, weight and geology; N= 13.

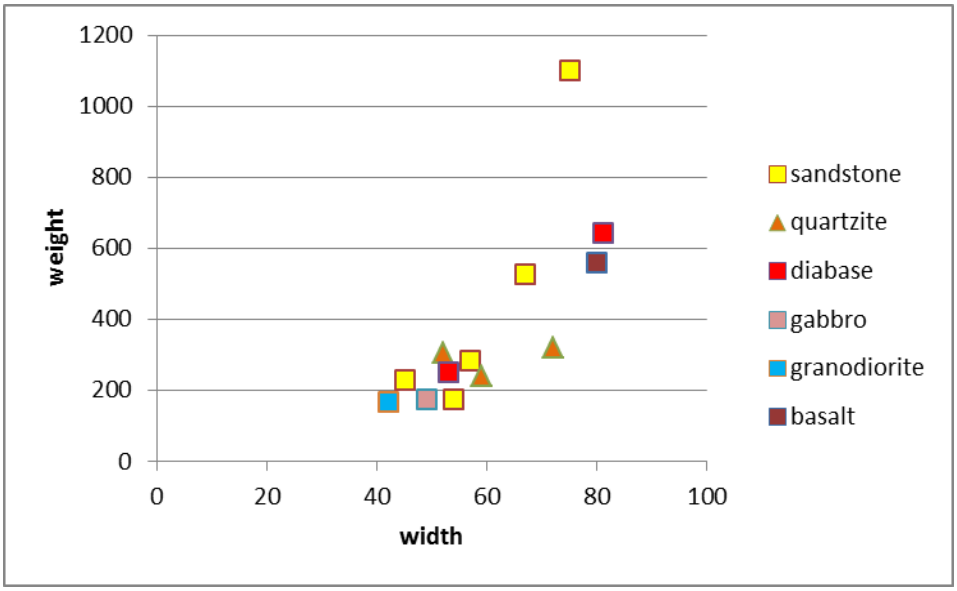


Fig.A 5.95. Pestles: correlation of the width, weight and geology; N= 13.

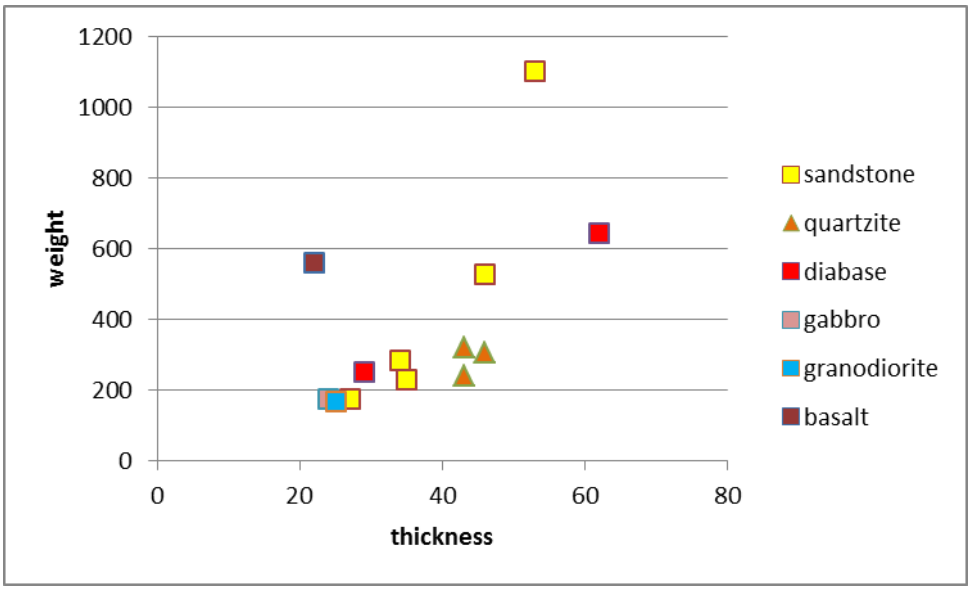


Fig.A 5.96. Pestles: correlation of the thickness, weight and geology; N= 13

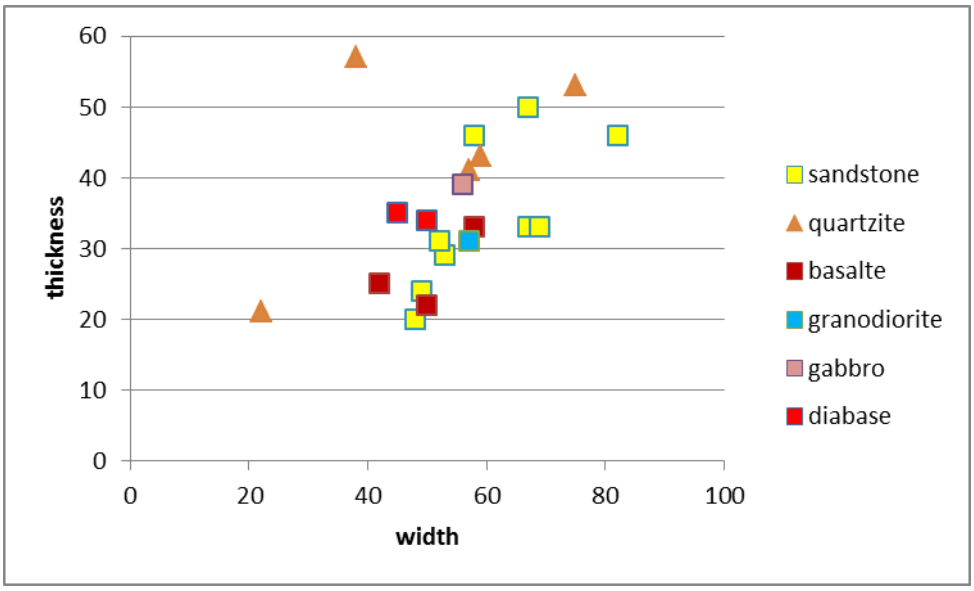


Fig.A 5.97. Pestles: correlation of width, thickness and geology ; sandstone:R^2=0,4878; N= 20.

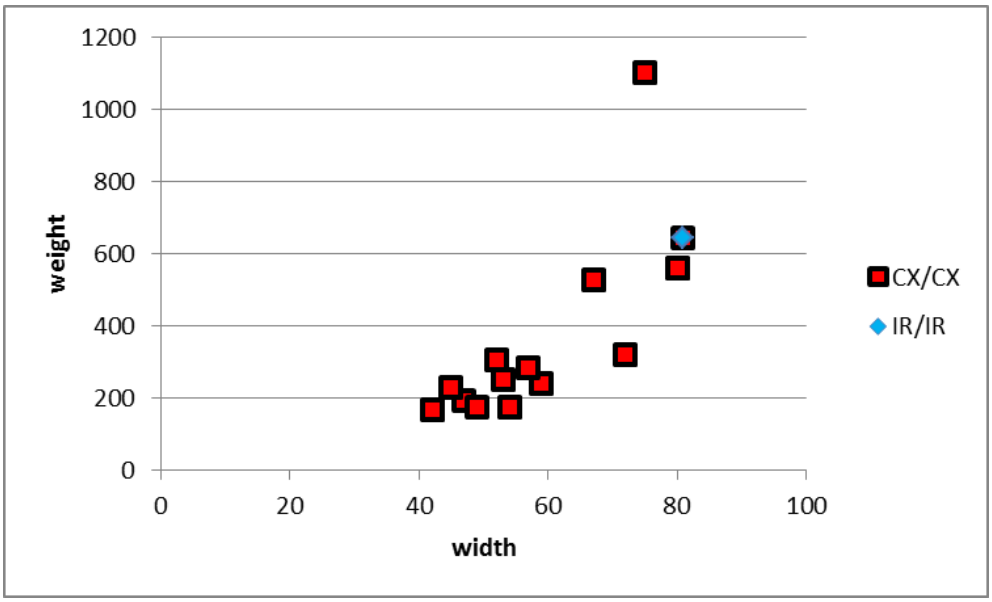


Fig.A 5.98. Pestles: correlation between the width, weight and morphology; N= 27.

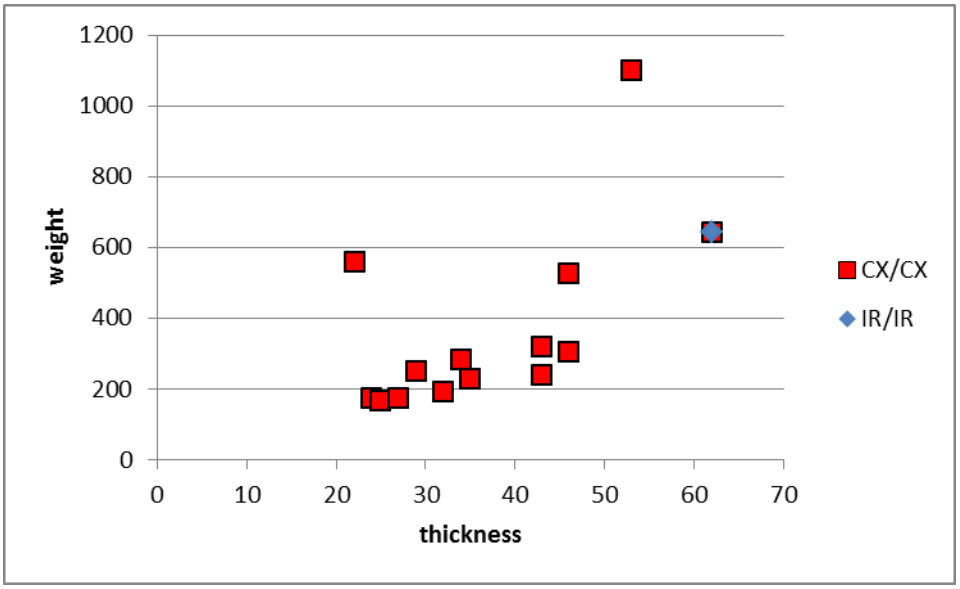


Fig. A5.99. Pestles: correlation of between thickness, ,weight and morphology; CX/CX: 0,4385; N= 27.

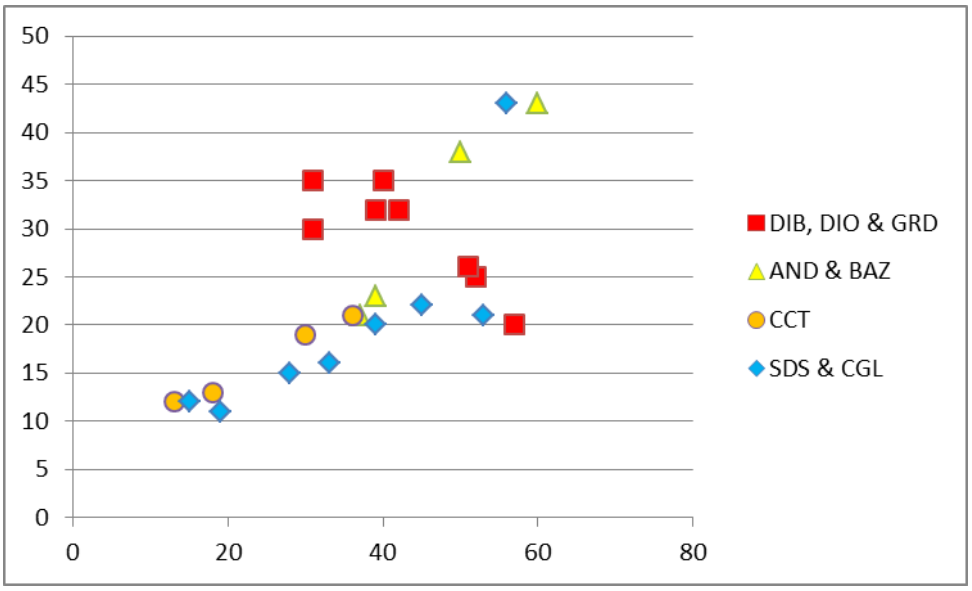


Fig. A5.100. Pestles: a correlation between the size of the active sides and geology; N= 24.DIB: diabase,;DIO-diorite;GRD: granodiorite; AND:andesite;BAZ:basalt; CCT:quartzite;SDS:sandstone;CGL:conglomerate.

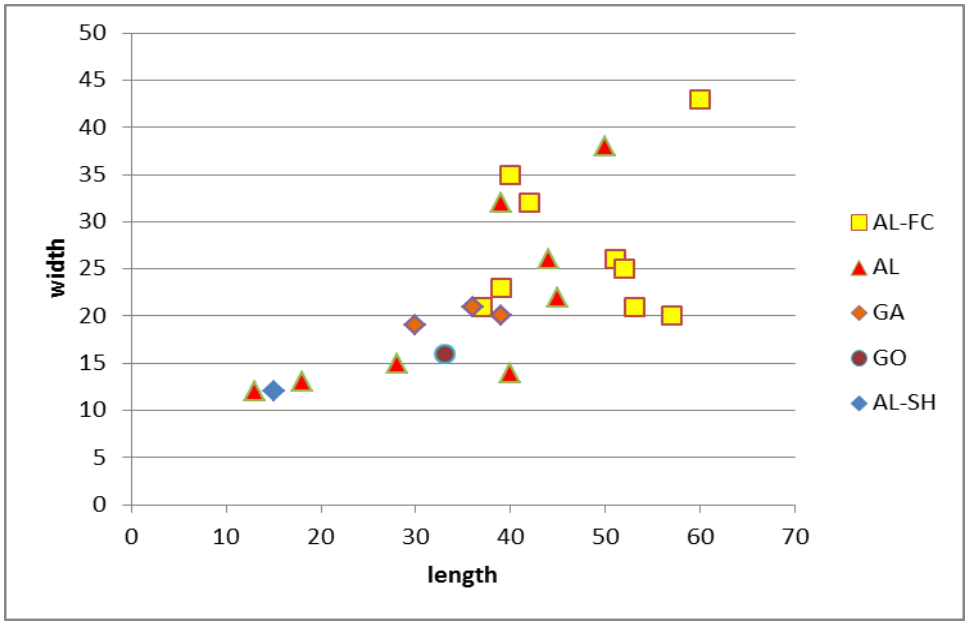


*Fig. A5.101. Pestles: a correlation of the size of active sides and use traces; AL: R^2= 0,7728; AL-FC R^2=**0,5279**; GA: R^2=**0,7252;** N= 22.*

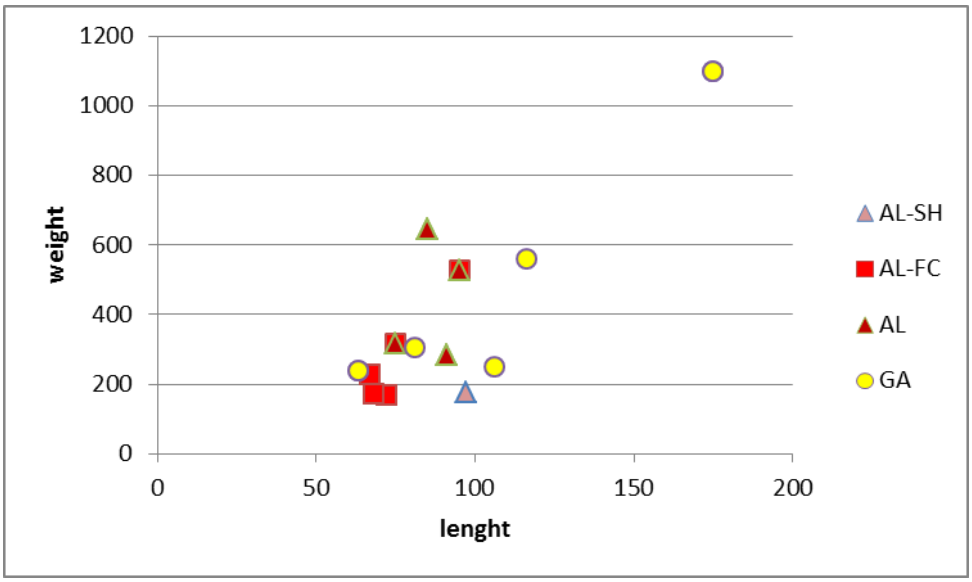


Fig. A5.102. Pestles: a correlation of length, weight and use traces; N=22.

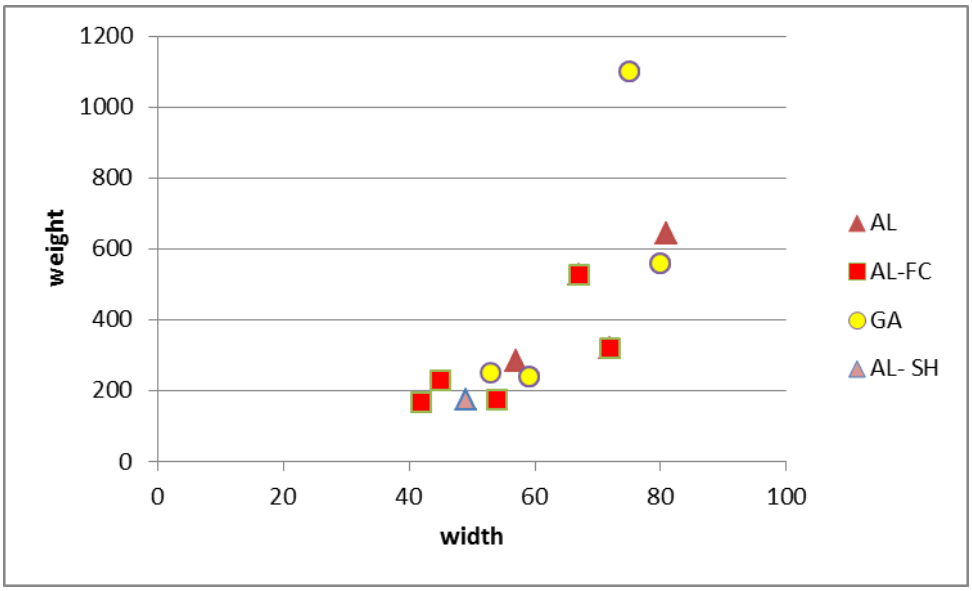


Fig. A5.103. Pestles: a correlation of width, weight and use traces; N=22.

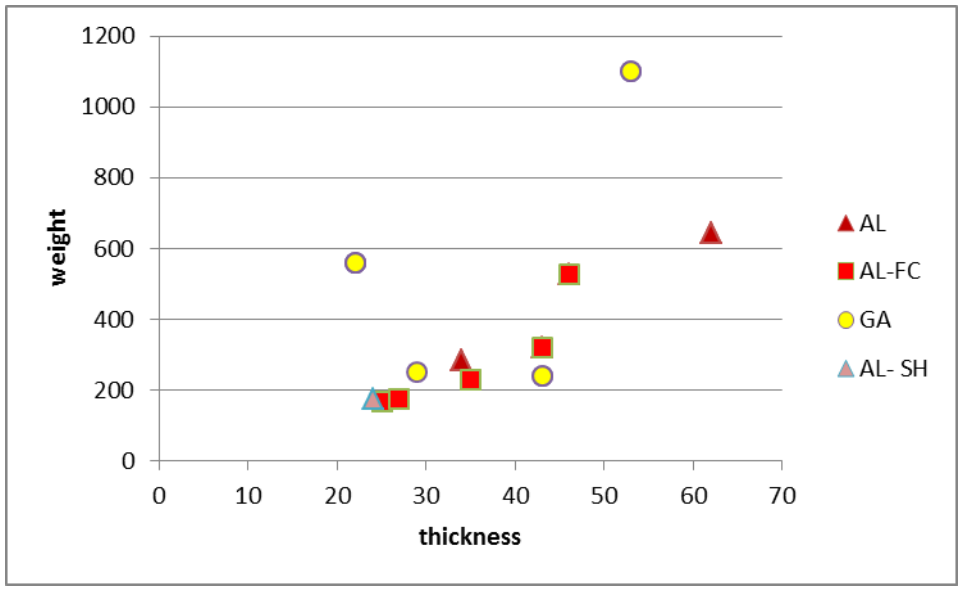


Fig. A5.104 .Pestles: a correlation of thickness, weight and use traces; N=25.

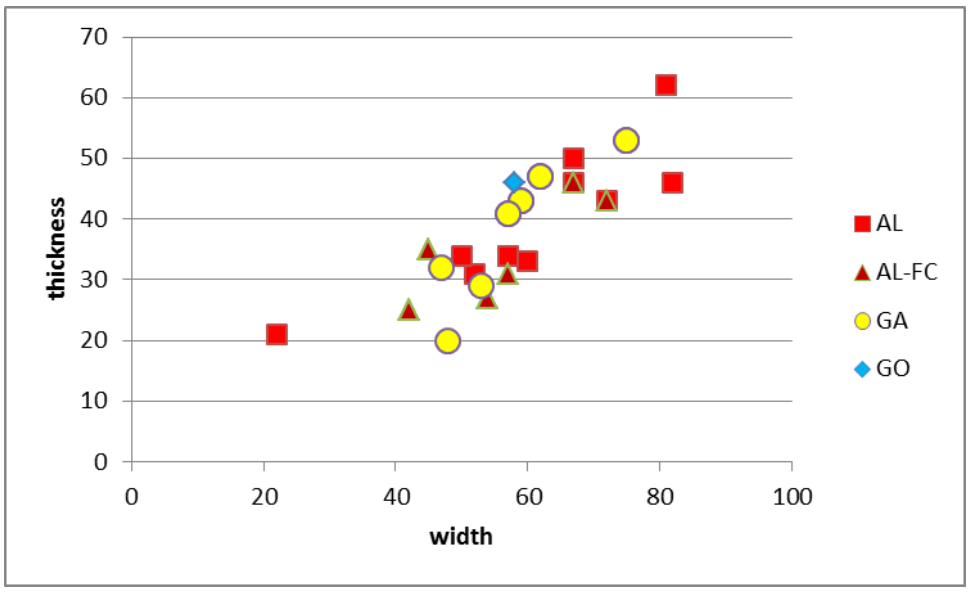


Fig. A5.105. Pestles: a correlation of thickness, weight and use traces; N=35

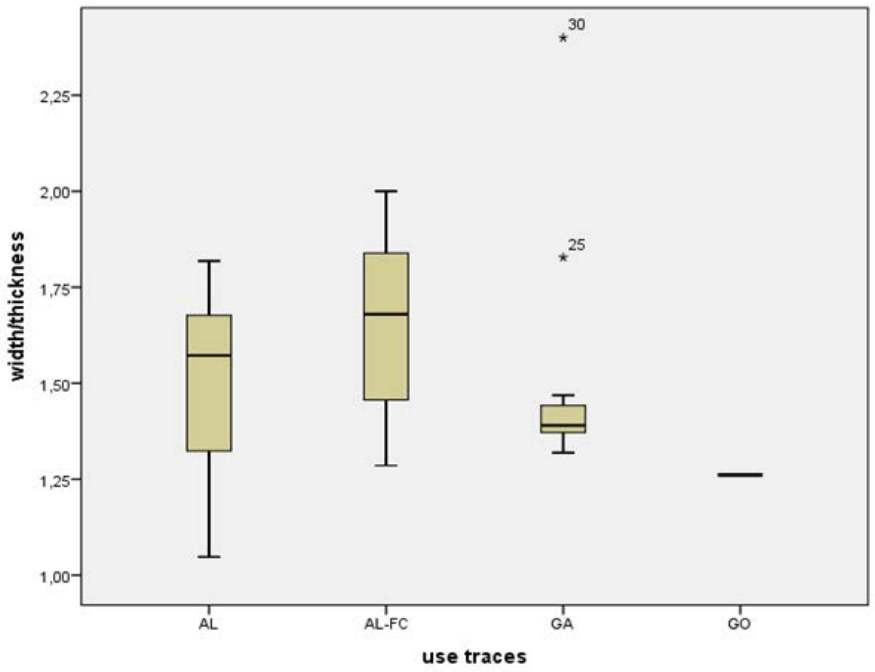


Fig. A5.106. Pestles: meric proportion (width / thickness) according to use traces; N= 36.