ORKUSTOFNUN
RAFORKUDEILD

Borroboranir við Sultartanga

1967 og 1968

eftir

Pál Ingólfsson

Reykjavík, september 1969

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2 Borholukort
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Viðaukar: Tafla yfir borro-borholur
Línurit yfir höggafjölda
Snið af borholum TH1-TH4

1. Inngangur

Haustin 1966 og 1968 voru framkvæmdar borro-boranir á svæðinu frá Tangafossi við ármót Tungnaár og Þjórsár beggja vegna Tungnaár upp á móts við buginn í ánni skammt fyrir neðan Hald. Hér er um að ræða hallalítið hraunflæmi. Mestur hluti boranna fór fram sunnan aðalkvíslar Tungnaár en nokkrar holur voru einnig boraðar beggja vegna farvegs Blautukvíslar og að auki fáeinar sunnar í sjálfum Sultartanganum, sem boranirnar eru kenndar við.

Boranir þessar voru könnunarboranir gerðar í þeim tilgangi í fyrsta lægi að gefa yfirlit yfir dýpi á fastan berggrunn á svæðinu sem heild og í öðru lagi til að fá hugmynd um dýpi á fast á áætluðum stíflustæðum og/eða gefa vísbendingu um beztu staðsetningu þeirra. Borunin var einnig gerð með hliðsjón af þeim möguleika að veita Tungnaá í einn stokk og þrengja þar með farveg hennar, en einmitt á þessu svæði kvíslast hún talsvert á hrauninu; kæliflötur hennar er því stór og ísmyndun hér mikil í ánni.

2. Jarðfræðilegt yfirlit

Jarðfræði þessa svæðis er tiltölulega einföld. Hvert postglaciala hraunlagið liggur hér ofan á öðru en milli þeirra eru misþykk sand- leir- og vikurlög. Efsta hraunlagið, TH_1, er eitt af Tungnaárhraununum og er nefnt Búrfellshraun. Aldur þess er u.þ.b. 3.000 ár það sýnir m.a. vikurlagið H_3, sem er 2.800 ára gamalt og víða er að finna ofan á hrauninu á þessu svæði. Þegar hraun þetta rann hefur að öllum líkindum verið stöðuvatn yfir talsverðum hluta borsvæðisins. Í borholu TH-3 skammt frá Tangafossi kom fram allt að 10 m þykkt setlag milli yfirborðshraunsins og næsta hraunlags undir, sem er TH_f. Gerfigígamyndanir, sem er að finna á stórum hluta svæðisins gefa einnig til kynna, að hraunið hafi runnið út í vatn eða yfir votlent yfirborð.

Við austanvert svæðið er hraunjaðar "Hekluhrauns". Það er úfið blokkhraun og mun yngra en TH_i, upprunnið í framhaldi Heklusprungunnar til NA.

Í Vaðöldu, lágu hæðinni austur af Tangafossi, er berggrunnurinn samskonar og í Sandafelli þ.e. grágrýti og andesit, sem jarðsögulega tilheyrir eldri grágrýtismynduninni svokölluðu og er því frá mið eða fyrri hluta ísaldar. Á norðaustur hluta öldunnar er ofan á grágrýtinu þunn mórenukápa frá síðari jökulskeiðum. Hið sama er að segja um Búðarhálsinn vestanverðan en mórenan er þar yfirleitt þykkari.

Svæðið norðan Blautukvíslar vestan Búðarhálsins er slétt sandflæmi, sem Þjórsá hefur hlaðið upp með framburði sínum. Sunnan til þekur sandurinn totu af Búrfellshrauninu eins og síðar verður vikið að.

3. Jarðfræðikortið.

Mynd 1 sýnir jarðfræðikort af borsvæðinu og nágrenni þess. Gefið hefur verið heildaryfirlit yfir jarðfræðina en hér verður gerð nánari grein fyrir þeim kortaeiningum, sem notaðar eru á hrauninu. Gerður er greinarmunur á fernskonar yfirborði, þ.e. sléttu blokkhrauni, úfnu blokkhrauni, gerfigígasvæðum og árfarvegum og útsléttuðu hrauni. Hraunið er að vísu allt mjög sand- og vikurorpið, sem gerir það sléttara en ella og í Sultarranganum og víðar eru nokkrar jarðvegsfitjar, sem gera það að verkum að útbreiðsla smárra gerfigíga getur verið talsvert meiri þar en sýnt er á kortinu.

Svæðið norðan Blautukvíslar er, eins og áður, greinir að lang mestu leyti sandslétta en þó má fastlega gera ráð fyrir að

Þjórsárhraunið teygi sig eitthvað inn eftir þessari lægð. Það má marka af því hversu grunnar borroborholurnar B-21, B-22 og B-23 eru og einnig sér í einstaka hraungrýtistoppa, sem sennilega eru gerfigígamyndanir,upp úr sandinum. Lega hraunjaðarins er áætluð með hliðsjón af niðurstöðum borananna.

Þar sem hraunið hefur fallið upp að Vaðöldu hefur myndazt dálítil lægð meðfram ödlunni einkum norðantil, þar sem hraunbrúnin er hæst er hún 4-5 m. Að norðaustan hefur hraunjaðarinn risið upp í dálítinn kamb, þar sem hann mætir öldunni.

Sem úfið blokkhraun er flokkað "Hekluhraunið" og smáhlutar austast á Þjórsárhrauninu.

Á stórum hlutum borsvæðisins eru þyrpingar gerfigígamyndana. Gígamyndanir þessar eru nokkuð breytilegar að gerð og stærð. Sumir gíganna eru nokkuð stórir og reglulegir en margir eru aðeins lágir hraungrýtistoppar. Yfirleitt eru þeir úr nokkuð grófgerðu gjalli. Stærstir og reglulegastir eru gígarnir á svæði norður af Vaðöldu sunnan Tungnaár. Sem gerfigígasvæði eru á kortinu afmörkuð þau svæði, þar sem segja má að hver gígurinn sé við annan, en auk þess eru merktir inn á kortið all margir stakir gígar. Nokkuð af smærri stökum gígum er þó ekki sýnt á kortinu. Einkum kann að vera talsvert meira af smáum gígum í Sultartanganum sjálfum.

Árfarvegir og útsléttað hraun er sá hluti hraunsins,þar sem marka má greinilega flóðfarvegi ánna, en gera má ráð fyrir að Tungnaá hafi flætt yfir stærra svæði en hér er sýnt fyrst eftir að hraunið rann. Svo lítur þó út fyrir sem hún hafi aldrei flætt inn í lægðina við Vaðöldu, því að þar er engann leir að finna en hann hefur hins vegar víða sezt til í lægðum á hinu afmarkaða svæði við ána. Garður sá, er áður var nefndur,norðaustan Vaðöldunnar kann að hafa hindrað það að áin næði að flæða þar inn, en hefði hún gert það er ólíklegt

að hún hefði yfirgefið þann farveg aftur.

4. Borro-boranir

Samtals voru boraðar 213 borro-borholur á svæðinu, 23 fyrra árið en 191 það síðara. Staðsetning borholanna er sýnd á borholukortunum mynd 2. Holurnar 23, sem boraðar voru haustið 1966, eru nálega allar meðfram farvegi Blautukvíslar enda boraðar með hliðsjón af þeim möguleika að veita aðalánni í þessa kvísl. Í holunum sunnan kvíslarinnar við suðurenda Búðarhálsins reyndist dýpi nokkuð eða 5 til 7 metrar og er líklegt að þessar holur séu utan við hraunjaðar efsta hraunsins (sbr. borholukortið). Annars staðar var dýpi minna. Þrjár holanna voru boraðar á sandaurunum norður með Þjórsánni. Þar sem dýpið reyndist aðeins 3-4 metrar þar,má telja víst, að hraunið teygi sig eitthvað inneftir lægðinni en það er algerlega hulið sandi nema næst Blautukvísl, þar má greina einstaka hrauntoppa upp úr.

Borunin 1968 var næstum öll á svæðinu sunnan aðalárinnar en þó voru boraðar 10 holur í sjálfum Sultartanganum. Til að byrja með voru boraðar beinar línur austan og vestan Vaðöldu, sem næst því á stíflustæðinu samkvæmt mynzturáætlun Sigurðar Thoroddsen. Þetta eru jafnframt suðurmörk borsvæðisins. Við staðsetningu á borholum var miðað við að hvergi yrði mikið meira en 200 m á milli hola en einnig var farið eftir mismunandi yfirborði hraunsins þannig að borunin gæfi til kynna ef einhver breyting yrði á gerð hraunsins. Að vestanverðu voru holurnar 9, V1-V9, og enda þótt þar sé mikið um smáa gerfigíga var dýpi hvergi meira en rúmir 4 m. Að austan voru boraðar 19 holur, V11-V29. Þar er hraunið tiltölulega slétt alla leið austur að jaðri "Hekluhraunsins" og dýpi yfirleitt aðeins 1-3 m, einungis á tveim stöðum tæpir 5 m. Næst Vaðöldunni í lægðinni sinn hvoru megin voru holurnar hafðar

þéttari en annars staðar. Hraunjaðarinn virðist lausari en hraunið sjálft, en mesta dýpi á lausu mórenukápunni á Vaðöldunni reyndist aðeins um 3 m að vestan og 3.5 að austan samkvæmt þessum borunum.

Norðan Vaðöldunnar var einnig boruð bein lína með 14 holum V-31-V44, í línu austur-vestur. Við norðaustur enda Vaðöldunnar hefur hraunbrúnin risið upp í dálítinn kamb og holurnar, sem eru staðsettar utan í þessum kambi V35-V-39 reyndust talsvert dýpri,eða 5-7 m,en aðrar holur í línunni, en fyrstu punktarnir í henni eru á aðalgerfigígasvæðinu. Holur V51-V53 voru einnig boraðar við norðaustur enda öldunnar. V51 er við hraunbrúnina, enda er dýpi hennar 4.8 m, en hinar liggja fjær og eru grynnri.

Línan H1-H22 nær alla leið frá Tungnaá skammt fyrir neðan Hald að Vaðöldu austanverðri. Hún liggur fyrst í suðvestur en síðan í beina línu í vestur. Línan var staðsett sem mögulegt stíflustæði. Dýpi var víðast hvar undir 3 m nema við endana þar var það milli 4 og 5 m. Holur H4 og H5 eru báðar á gerfigíghólum. Að öðru leyti er hraunið nokkuð slétt með stöku gerfigígamyndunum.

Holurnar S1 til S12 eru stakir punktar á suðvestur horni svæðisins sunnan Tungnaár. Þarna er hver gerfigígurinn við annan en í lægðunum á milli þeirra eru flóðfarvegir árinnar. Gígarnir eru mjög misstórir, sumir smá hringöld, en þeir stærstu 4-5 m háir. Dýpi er nokkuð mismunandi í þessum holum. S2 og S10 eru á gerfigígum, þó er þar lítið dýpi. Við S5 og S7 hefur einhver upplifting átt sér stað og þær eru nokkuð dýpri en flestar hinar holurnar. S4 er á útsléttuðu hrauni og nokkuð djúp.

Holurnar S31-S35 og S41-S68 eru allar staðsettar út í hólmunum milli aðal árinnar og syðstu kvíslanna. Vestur hlutinn er gerfigígasvæði en austurhlutinn að mestu sléttur ársandur ofan á hrauninu. Í aðeins einni holu er um verulegt dýpi að ræða, þ.e. S46, en hún er á gerfigíg. Fleiri holur voru hér boraðar á gígum en borun gaf þó ekki samskonar niðurstöðu.

Allar aðrar holur sunnan Tungnaár, S104-S181, mynda nokkurn-veginn beinar samsíða línur frá ánni eða syðstu kvíslunum til suðvesturs að beinu línunni norðan og austan Vaðöldu og var ætlað að gefa heildaryfirlit yfir dýpi á fastan grunn á öllu þessu svæði og gefa sérstaklega til hinna ef um misdýpi væri að ræða eftir mismunandi yfirborði hraunsins. Austasta línan, S101-S105, er u.þ.b. 200 m vestar en línan H4-H10. Í næstu línu eru S106-S112 og þar næstu S113 til S119. Á syðri hluta þess svæðis, sem þessar línur ná yfir, er mikið af smáum gerfigígum en nyrðri hlutinn er mest megnis útsléttaðir flóðfarvegir. Flestar eru holurnar grunnar en við 111 og 112 er nokkru dýpra, einnig við 114 og 117. S 113 hefur sérstöðu því hún er á sandeyri við ána norðan við hraunjaðar efsta hraunsins enda er dýpi þar næstum 9 m.

Holunúmer S120-S130 falla úr því ekki vannst tími til að bora þær vegna veðurs. Verður því um 400 m bil að næstu línu S131-S139, en það ætti ekki að koma í veg fyrir að nokkuð rétt heildarmynd fáist. S131 er á allstórum gerfigíg og nokkuð djúp. Allar næstu línur 140-147, 148-153, 154-159 og 160-165 eru á sléttu mjög sandorpnu hrauni með stökum lágum gíghrúgöldum og allar holur eru frekar grunnar. Hola S165 er þó á stórum gíghól og reyndist mjög djúp eða um 13 m. Í fyrstu tilraun gekk borinn þó aðeins niðurum 0.9 m þar en hefur þá sennilega lent á stórum steini. Slíkt gæti einnig hafa hent víðar (án þess að frekari borun hafi verið reynd), því að í flestum gerfigíganna virðist hraunið mjög gróft en ekki

vera gjallkennt eins og oft á sér stað um gerfigíga. Hér er stundum fremur um svokallaða hornitos að ræða, en eiginlega gerfigíga.

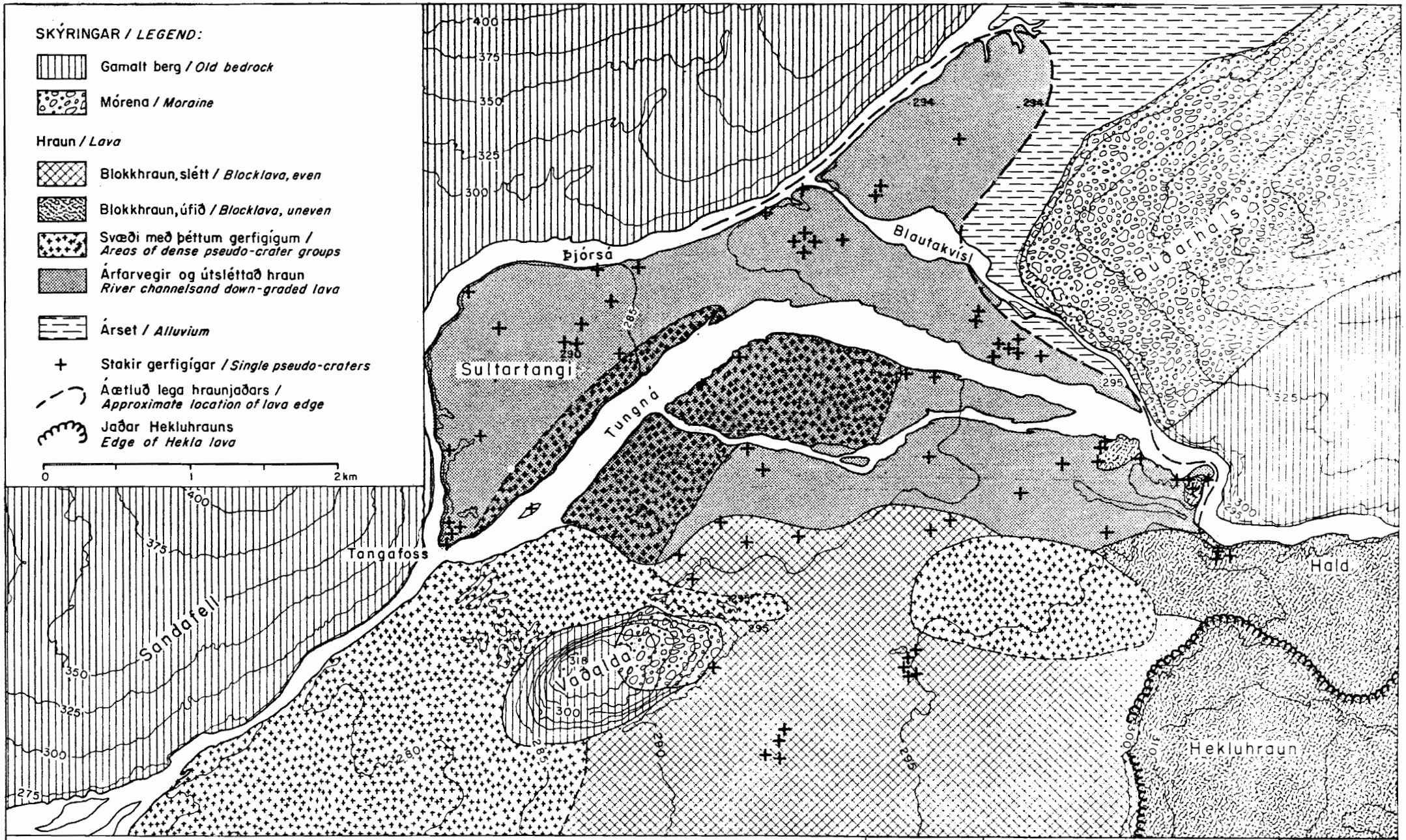
Næstu tvær línur eru á samskonar hrauni en ná inn í aðalgígabeltið. S168-S171 eru nokkuð djúpar, sömuleiðis S177 en hún er á gergigíg. Síðasta línan er öll innan þess og S178 á gerfigíg enda 7.0 m djúp. Í Sultartanganum var borað á tveim stöðum. Í fyrsta lagi fjórar holur T1-T4 fremst á tanganum í framhaldi af beinu línunni vestan Vaðöldu. T4 er á stórum gerfigíg og 9.2 m djúp. T5-T10 eru í nokkurn veginn beinni línu samsíða ánni norðarlega á tanganum á útsléttuðu hrauni með stökum smáum gerfigígum.

5. Niðurstöður

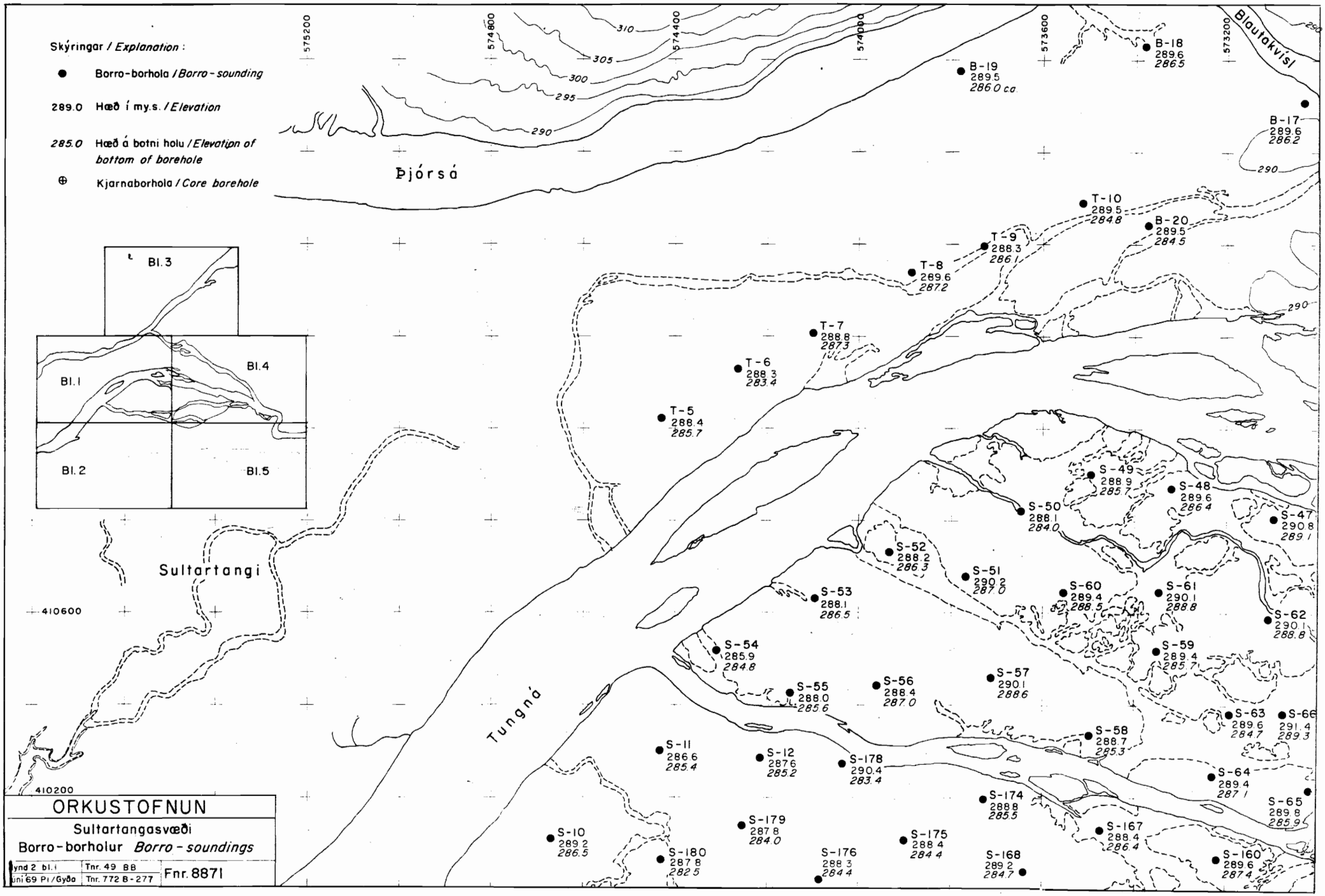
Boranirnar sýna að í heild er nokkuð jafnt dýpi á fastan grunn á öllu svæðinu, en gera má þó ráð fyrir að föstum grunni sé ekki alls staðar fyllilega náð með borununum. Á stöku stað, þar sem mjög grunnt reyndist á fast við fyrstu borun, var borinn færður til um 1-2 m og gerð önnur tilraun. Á slíkur hrauni fékkst hvergi aukið dýpi með þessu móti. Hins vegar fékkst, eins og áður greinir, mikil dýptaraukning á einum gerfigíg, er slíkt var reynt, og á nokkrum stórum gígum fékkst meira dýpi en umhverfis þá. Gera má því fastlega ráð fyrir, að á aðal gerfigígasvæðunum og annars staðar, þar sem stærri gígar eru, séu göt í gegnum hraunið og það yfirleitt lausara í sér.

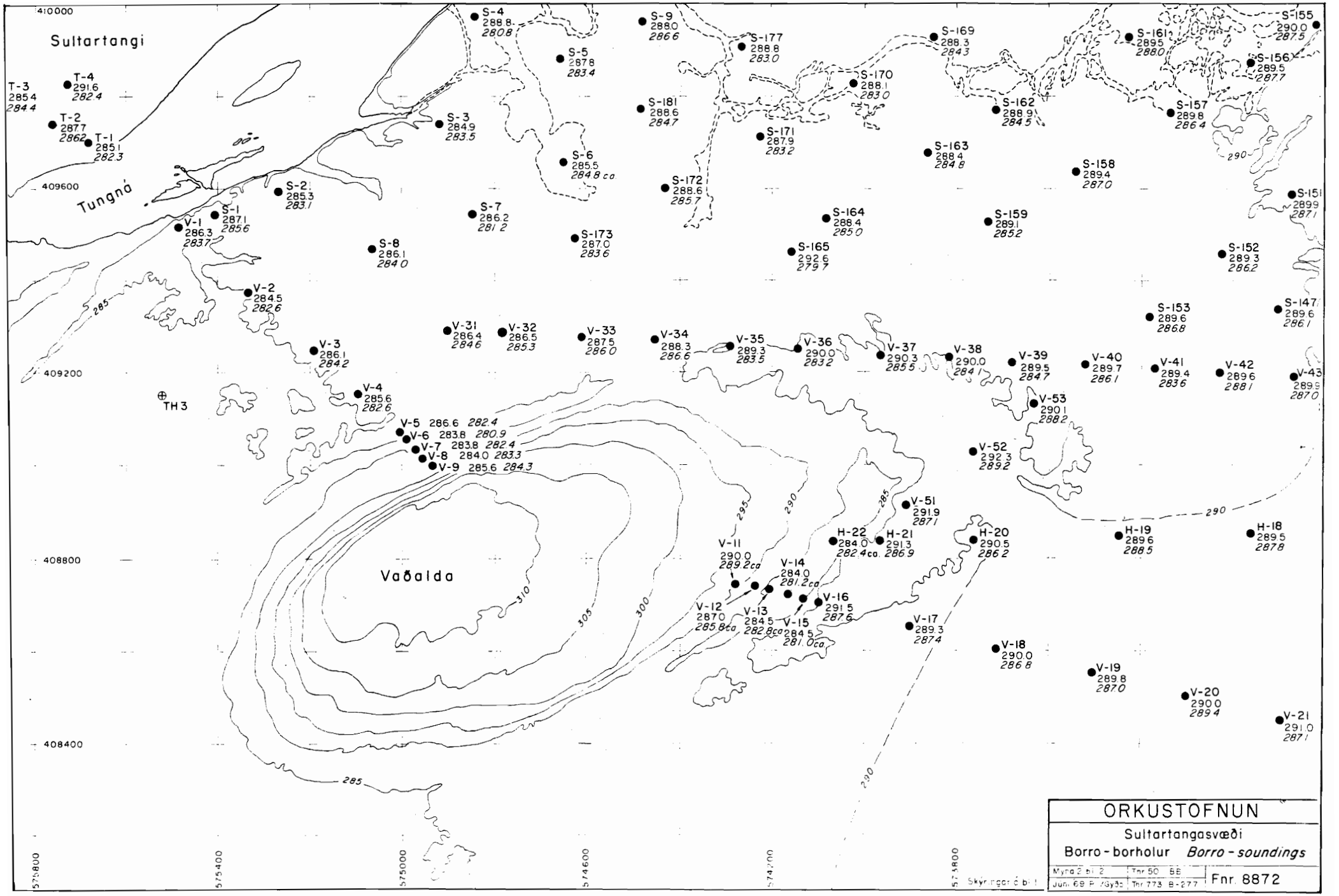
Á grundvelli borananna var gert berggrunnskort af svæðinu með 1 m hæðarlínum og einnig voru gerð línurit yfir höggafjölda fyrir allar holurnar. Kortið sýnir að lægð er í berggrunninn norður af Vaðöldu, en þar er einmitt aðal gerfigígasvæðið. Norður við ána nokkru austar kemur að vísu fram hæð, sem einnig er á gerfigígasvæðinu en ein borhola þar, sem staðsett var í gerfigíg reyndist 4-5 m dýrpi en flestar holur umhverfis.

Norðaustur af Vaðöldu kemur fram smá hryggur og norður af honum smá lægð. Í lægðinni við Vaðöldu reyndist hvergi meira dýpi en 2-4 m en hraunjaðarinn næst lægðinni er nokkuð lausari í sér en hraunið sjálft.



	Mynd 1	ORKUSTOFNUN Sultartangasvæði – Jarðfræðikort *Geologic map of the Sultartangi area*	Jún. 69 PI / GJ/ðe Tnr 777 B-277 Fnr. 8876


Skýringar / Explanation :
Borro-borhola / Borro-sounding
289.0 Hæð í my.s. / Elevation
285.0 Hæð á botni holu / Elevation of bottom of borehole
Kjarnaborhola / Core borehole
Bl. 1
Bl. 2
Bl. 3
Bl. 4
Bl. 5
Þjórsá
Sultartangi
Tungná
Blautakvísl
575200
574800
574400
574000
573600
573200
410600
410200
310
305
300
295
290
B-17 289.6 286.2
B-18 289.6 286.5
B-19 289.5 286.0 ca.
B-20 289.5 284.5
T-5 288.4 285.7
T-6 288.3 283.4
T-7 288.8 287.3
T-8 289.6 287.2
T-9 288.3 286.1
T-10 289.5 284.8
S-10 289.2 286.5
S-11 286.6 285.4
S-12 287.6 285.2
S-47 290.8 289.1
S-48 289.6 286.4
S-49 288.9 285.7
S-50 288.1 284.0
S-51 290.2 287.0
S-52 288.2 286.3
S-53 288.1 286.5
S-54 285.9 284.8
S-55 288.0 285.6
S-56 288.4 287.0
S-57 290.1 288.6
S-58 288.7 285.3
S-59 289.4 285.7
S-60 289.4 288.5
S-61 290.1 288.8
S-62 290.1 288.8
S-63 289.6 284.7
S-64 289.4 287.1
S-65 289.8 285.9
S-66 291.4 289.3
S-160 289.6 287.4
S-167 288.4 286.4
S-168 289.2 284.7
S-174 288.8 285.5
S-175 288.4 284.4
S-176 288.3 284.4
S-178 290.4 283.4
S-179 287.8 284.0
S-180 287.8 282.5
ORKUSTOFNUN
Sultartangasvæði
Borro-borholur Borro-soundings
Tnr. 49 BB
Tnr. 772 B-277
Fnr. 8871



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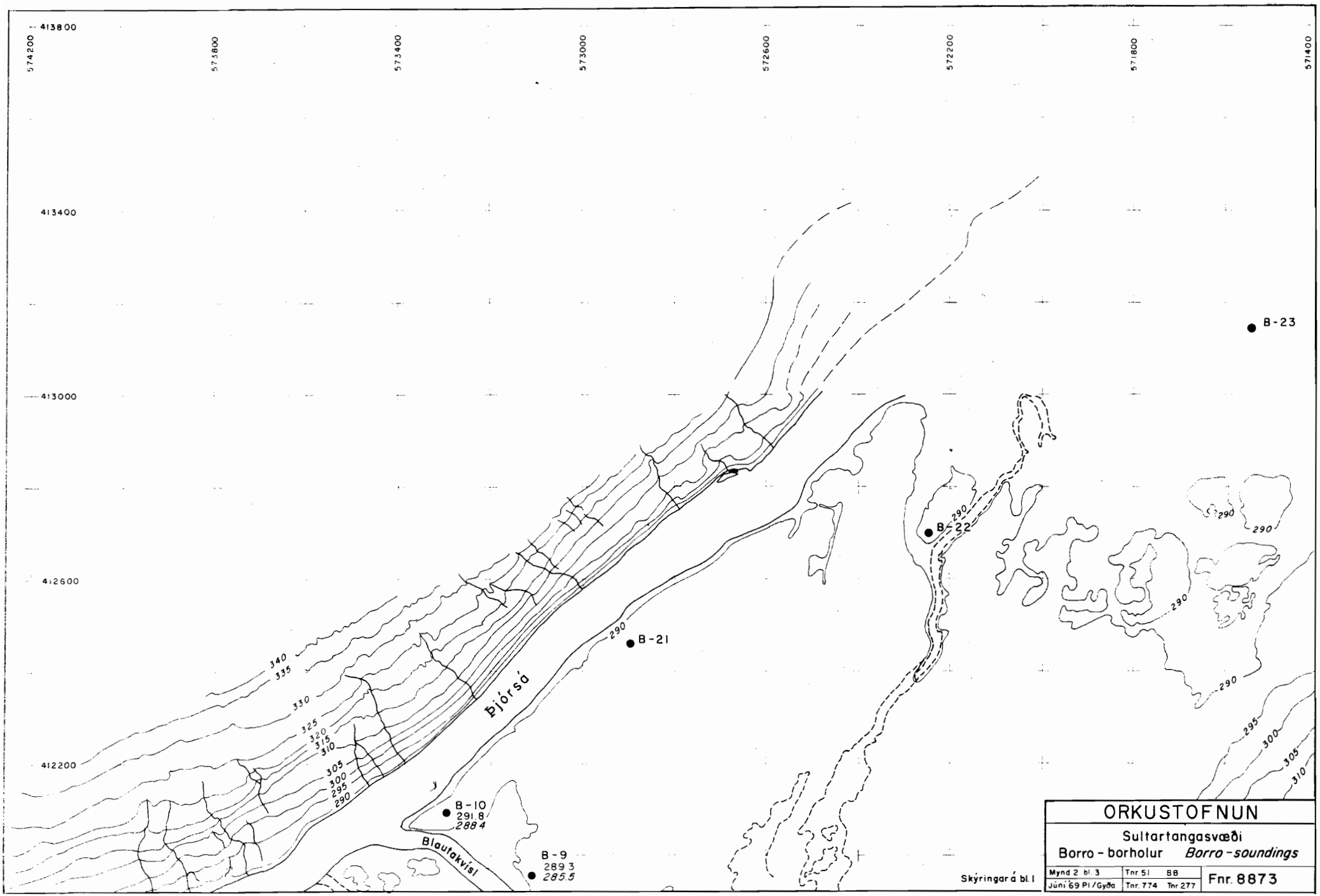
Sultartangasvæði

Borro - borholur *Borro - soundings*

Myrá 2 bl. 2 | Tnr 50 BB

Juni 69 P. Gyða | Tnr 773 B-277

Fnr. 8872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320
315
310
305
300
295
290
Þjórsá
Blautakvísl
B-10
291.8
288.4
B-9
289.3
285.5
B-21
B-22
B-23
290
290
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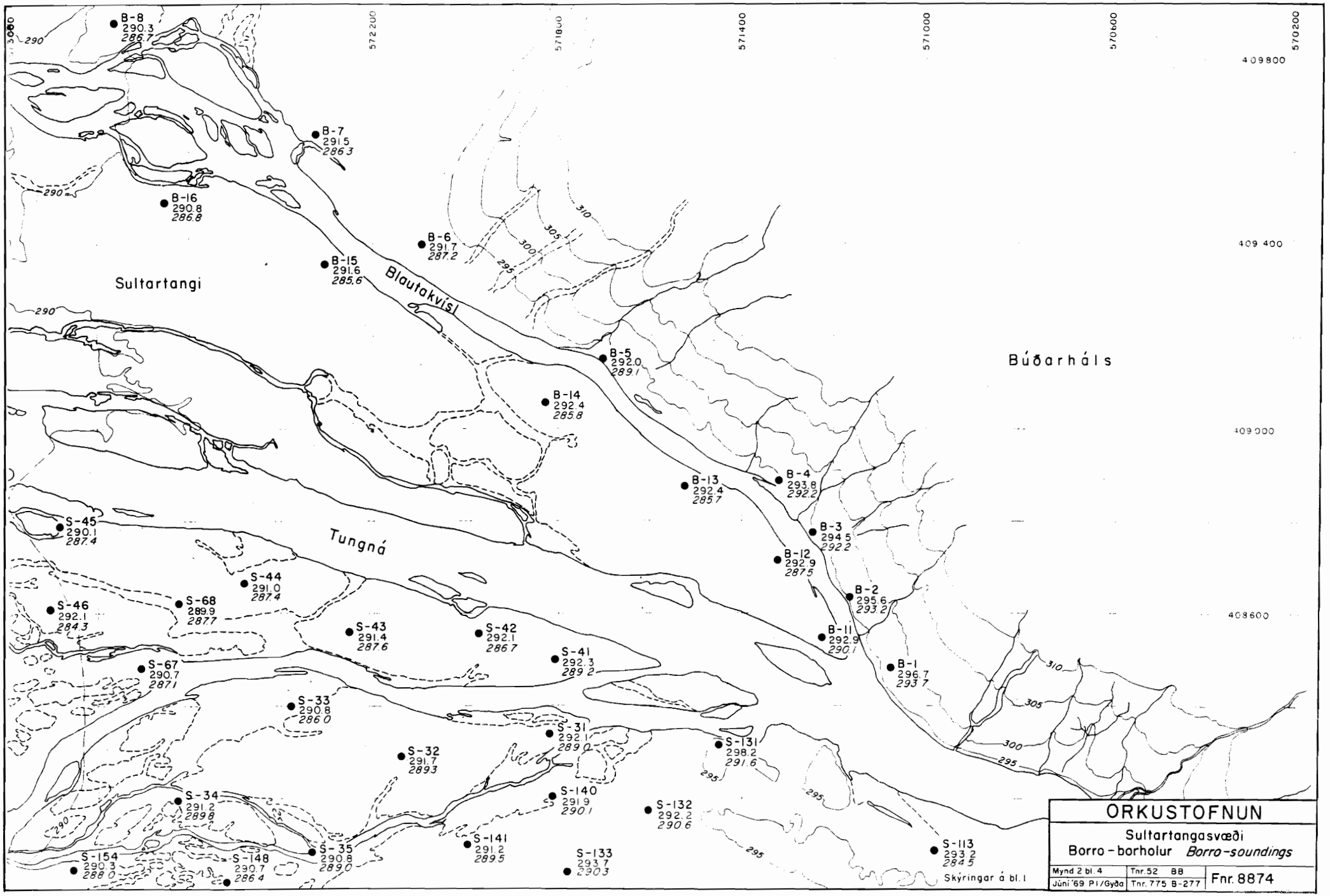
290
290
295
300
305
310
Skýringar á bl. 1
ORKUSTOFNUN
Sultartangasvæði
Borro - borholur
Borro - soundings
Mynd 2 bl. 3
Tnr 51 88
Júní 69 PI/Gyða
Tnr. 774 Tnr 277
Fnr. 8873



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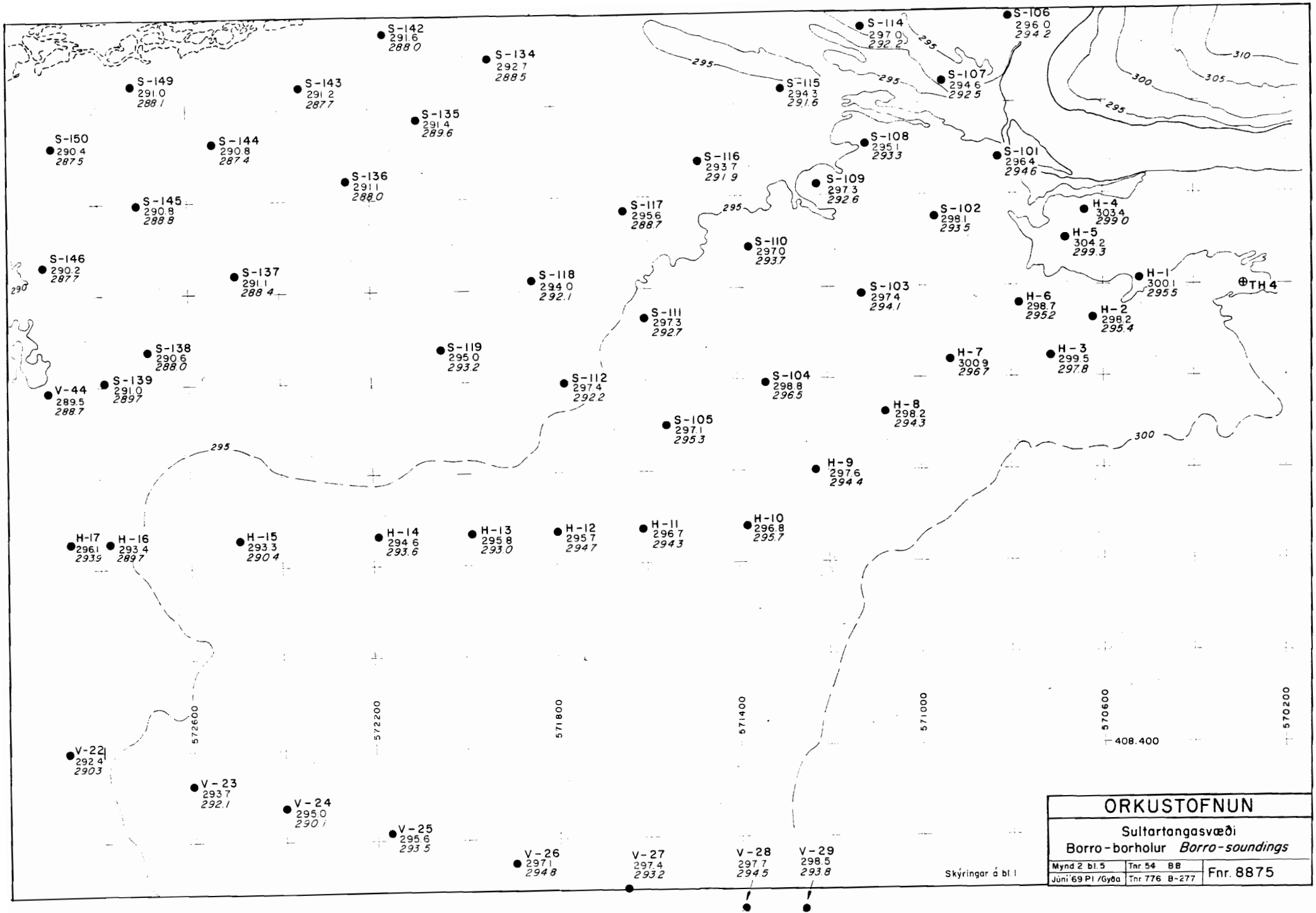
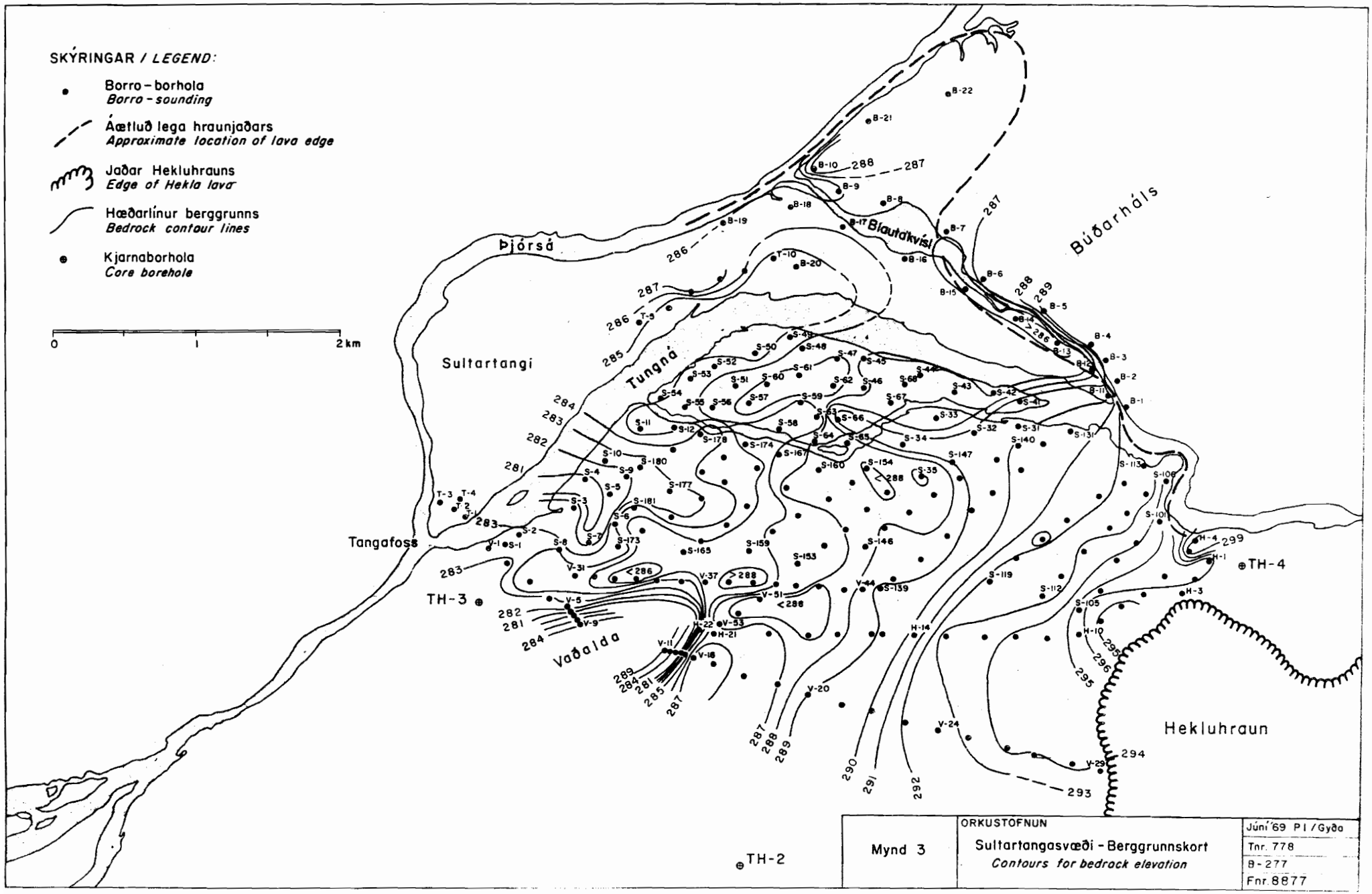
Sultartangasvæði

Borro - borholur *Borro-soundings*

Mynd 2 bl. 4	Tnr. 52 88	Fnr. 8874
Júní '69 PI/Gyða	Tnr. 775 B-277	


S-142 291.6 288.0
S-134 292.7 288.5
S-149 291.0 288.1
S-143 291.2 287.7
S-135 291.4 289.6
S-150 290.4 287.5
S-144 290.8 287.4
S-136 291.1 288.0
S-145 290.8 288.8
S-146 290.2 287.7
S-137 291.1 288.4
S-118 294.0 292.1
S-138 290.6 288.0
S-119 295.0 293.2
V-44 289.5 288.7
S-139 291.0 289.7
S-112 297.4 292.2
S-111 297.3 292.7
S-117 295.6 288.7
S-116 293.7 291.9
S-114 297.0 292.2
S-115 294.3 291.6
S-106 296.0 294.2
S-107 294.6 292.5
S-108 295.1 293.3
S-109 297.3 292.6
S-101 296.4 294.6
S-110 297.0 293.7
S-102 298.1 293.5
H-4 303.4 299.0
H-5 304.2 299.3
S-103 297.4 294.1
H-1 300.1 295.5
TH4
H-6 298.7 295.2
H-2 298.2 295.4
S-104 298.8 296.5
H-7 300.9 296.7
H-3 299.5 297.8
S-105 297.1 295.3
H-8 298.2 294.3
H-9 297.6 294.4
H-17 296.1 293.9
H-16 293.4 289.7
H-15 293.3 290.4
H-14 294.6 293.6
H-13 295.8 293.0
H-12 295.7 294.7
H-11 296.7 294.3
H-10 296.8 295.7
V-22 292.4 290.3
V-23 293.7 292.1
V-24 295.0 290.1
V-25 295.6 293.5
V-26 297.1 294.8
V-27 297.4 293.2
V-28 297.7 294.5
V-29 298.5 293.8
295
300
305
310
290
572600
572200
571800
571400
571000
570600
570200
408.400
Skýringar á bl. 1
ORKUSTOFNUN
Sultartangasvæði
Borro-borholur Borro-soundings
Mynd 2 bl. 5
Tnr 54 88
Júní '69 PI /Gyða
Tnr 776 B-277
Fnr. 8875


SKÝRINGAR / LEGEND:
Borro – borhola
Borro – sounding
Áætluð lega hraunjaðars
Approximate location of lava edge
Jaðar Hekluhrauns
Edge of Hekla lavá
Hæðarlínur berggrunns
Bedrock contour lines
Kjarnaborhola
Core borehole
0
1
2 km
Sultartangi
Þjórsá
Tungná
Búðarháls
Blautakvísl
Tangafoss
TH-3
TH-4
TH-2
Vaðalda
Hekluhraun
Mynd 3
ORKUSTOFNUN
Sultartangasvæði - Berggrunnskort
Contours for bedrock elevation
Júní '69 PI/Gyða
Tnr. 778
B-277
Fnr. 8877

BORRO-BORUN VIÐ SULTARTANGA

-haustið 1966-

Hola nr.	Hæð á yfirborði m y.s.	Dýpi holu m	Hæð á botni holu m y.s.	Athugasemdir
B 1	296.7	3.0	293.7	
B 2	295.6	2.4	293.2	
B 3	294.5	2.3	292.2	
B 4	293.8	1.6	292.2	
B 5	292.0	2.9	289.1	
B 6	291.7	4.5	287.2	
B 7	291.5	5.2	286.3	
B 8	290.3	3.6	286.7	
B 9	289.3	3.8	285.5	
B10	291.8	3.4	288.4	
B11	292.9	2.8	290.1	
B12	292.9	5.4	287.5	
B13	292.4	6.7	285.7	
B14	292.4	6.6	285.8	
B15	291.6	6.0	285.6	
B16	290.8	4.0	286.8	
B17	289.6	3.4	286.2	
B18	289.6	3.1	286.5	
B19	289.5	3.5	286.0	ca.
B20	289.5	5.0	284.5	
B21		3.5		
B22		3.4		
B23		3.3		

BORRO-BORUN VIÐ SULTARTANGA

-haustið 1968-

Hola nr.	Hæð á yfirborði m y.s.	Dýpi holu m	Hæð á botni holu m y.s.	Athugasemdir
VI	286.3	2.6	283.7	
V2	284.5	1.9	282.6	
V3	286.1	1.9	284.2	
V4	285.6	3.0	282.6	
V5	286.6	4.2	282.4	
V6	283.8	2.9	280.9	
V7	283.8	1.4	282.4	
V8	284.0	0.7	283.3	2m austar 0.9m á fast
V9	285.6	1.3	284.3	
V11	290.0	0.8	289.2	ca.
V12	287.0	1.2	285.8	ca.
V13	284.5	1.7	282.8	ca.
V14	284.0	2.8	281.2	ca.
V15	284.5	3.5	281.0	ca.
V16	291.5	3.9	287.6	
V17	289.3	1.9	287.4	
V18	290.0	3.2	286.8	
V19	289.8	2.8	287.0	
V20	290.0	0.6	289.4	2m austar 0.6m á fast
V21	291.0	3.9	287.1	
V22	292.4	2.1	290.3	
V23	293.7	1.6	292.1	
V24	295.0	4.9	290.1	
V25	295.6	2.1	293.5	
V26	297.1	2.3	294.8	
V27	297.4	4.2	293.2	
V28	297.7	3.2	294.5	
V29	298.5	4.7	293.8	
V31	286.4	1.8	284.6	
V32	286.5	1.2	285.3	
V33	287.5	1.5	286.0	
V34	288.3	1.7	286.6	

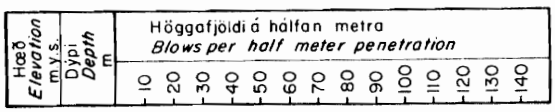
Hola nr.	Hæð á yfirborði m y.s.	Dýpi holu m	Hæð á botni holu m y.s.	Athugasemdir
V35	289.3	5.8	283.5	
V36	290.0	6.8	283.2	
V37	290.3	4.8	285.5	
V38	290.0	5.9	284.1	
V39	289.5	4.8	284.7	
V40	289.7	3.6	286.1	
V41	289.4	5.8	283.6	
V42	289.6	1.5	288.1	
V43	289.9	2.9	287.0	
V44	289.5	0.8	288.7	
V51	291.9	4.8	287.1	
V52	292.3	3.1	289.2	
V53	290.1	1.9	288.2	
H 1	300.1	4.6	295.5	
H 2	298.2	2.8	295.4	
H 3	299.5	1.7	297.8	
H 4	303.4	4.4	299.0	
H 5	304.2	4.9	299.3	
H 6	298.7	3.5	295.2	
H 7	300.9	4.2	296.7	
H 8	298.2	3.9	294.3	
H 9	297.6	3.2	294.4	
H10	296.8	1.1	295.7	2m vestar 0.9m á fast
H11	296.7	2.4	294.3	
H12	295.7	1.0	294.7	
H13	295.8	2.8	293.0	
H14	294.6	1.0	293.6	
H15	293.3	2.9	290.4	
H16	293.4	3.7	289.7	
H17	296.1	2.2	293.9	
H18	289.5	1.7	287.8	
H19	289.6	1.1	288.5	
H20	290.5	4.3	286.2	
H21	291.3	4.4	286.9	

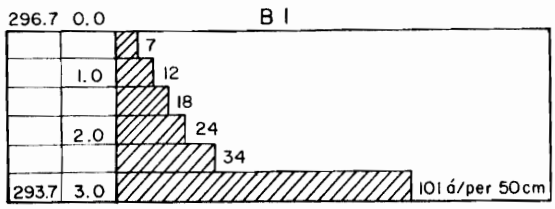
Hola Nr.	Hæð á yfirborði m y.s.	Dýpi holu m	Hæð á botni holu m y.s.	Athugasemdir
H22	284.0	1.6	282.4	ca.
S 1	287.1	1.5	285.6	
S 2	285.3	2.2	283.1	
S 3	284.9	1.4	283.5	
S 4	285.8	5.0	280.8	
S 5	287.8	4.4	283.4	
S 6	285.5	0.7	284.8	ca.
S 7	286.2	5.0	281.2	
S 8	286.1	2.1	284.0	
S 9	288.0	1.4	286.6	
S10	289.2	2.7	286.5	
S11	286.6	1.2	285.4	
S12	287.6	2.4	285.2	
S31	292.1	3.1	289.0	
S32	291.7	2.4	289.3	
S33	290.8	4.8	286.0	
S34	291.2	1.4	289.8	
S35	290.8	1.8	289.0	
S41	292.3	3.1	289.2	
S42	292.1	5.4	286.7	
S43	291.4	3.8	287.6	
S44	291.0	3.6	287.4	
S45	290.1	2.7	287.4	
S46	292.1	7.8	284.3	
S47	290.8	1.7	289.1	
S48	289.6	3.2	286.4	
S49	288.9	3.2	285.7	
S50	288.1	4.1	284.0	
S51	290.2	3.2	287.0	
S52	288.2	1.9	286.3	
S53	288.1	1.6	286.5	
S54	285.9	1.1	284.8	

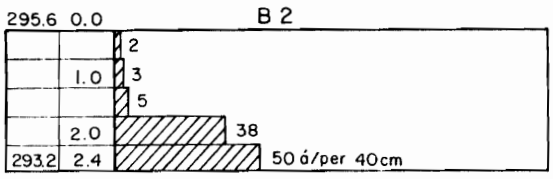
Hola nr.	Hæð á yfirborði m y.s.	Dýpi holu m	Hæð á botni holu m y.s.	Athugasemdir
S55	288.0	2.4	285.6	
S56	288.4	1.4	287.0	
S57	290.1	1.5	288.6	
S58	288.7	3.4	285.3	
S59	289.4	3.7	285.7	
S60	289.4	0.9	288.5	
S61	290.1	1.3	288.8	
S62	290.1	1.3	288.8	
S63	289.6	4.9	284.7	
S64	289.4	2.3	287.1	
S65	289.8	3.9	285.9	
S66	291.4	2.1	289.3	
S67	290.7	3.6	287.1	
S68	289.9	2.2	287.7	
S101	296.4	1.8	294.6	
S102	298.1	4.6	293.5	
S103	297.4	3.3	294.1	
S104	298.8	2.3	296.5	
S105	297.1	1.8	295.3	
S106	296.0	1.8	294.2	
S107	294.6	2.1	292.5	
S108	295.1	1.8	293.3	
S109	297.3	4.7	292.6	
S110	297.0	3.3	293.7	
S111	297.3	4.6	292.7	
S112	297.4	5.2	292.2	
S113	293.2	8.7	284.5	
S114	297.0	4.8	292.2	
S115	294.3	2.7	291.6	
S116	293.7	1.8	291.9o	
S117	295.6	6.9	288.7	
S118	294.0	1.9	292.1	
S119	295.0	1.8	293.2	
S131	298.2	6.6	291.6	
S132	292.2	1.6	290.6	

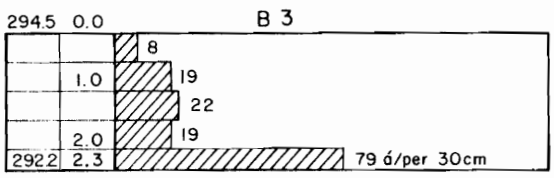
Hola nr.	Hæð á yfirborði m y.s.	Dýpi holu m	Hæð á botni holu m y.s.	Athugasemdir
S133	293.7	3.4	290.3	
S134	292.7	4.2	288.5	
S135	291.4	1.8	289.6	
S136	291.1	3.1	288.0	
S137	291.1	2.7	288.4	
S138	290.6	2.6	288.0	
S139	291.0	1.3	289.7	
S140	291.9	1.8	290.1	
S141	291.2	1.7	289.5	
S142	291.6	3.6	288.0	
S143	291.2	3.5	287.7	
S144	290.8	3.4	287.4	
S145	290.8	2.0	288.8	
S146	290.2	2.5	287.7	
S147	289.6	3.5	286.1	
S148	290.7	4.3	286.4	
S149	291.0	2.9	288.1	
S150	290.4	2.8	287.5	
S151	289.9	2.8	287.1	
S152	289.3	3.1	286.2	
S153	289.6	2.8	286.8	
S154	290.3	2.3	288.0	
S155	290.0	2.5	287.5	
S156	289.5	1.8	287.7	
S157	289.8	3.4	286.4	
S158	289.4	2.4	287.0	
S159	289.1	3.9	285.2	
S160	289.6	2.2	287.4	
S161	289.5	1.5	288.0	
S162	288.9	4.4	284.5	
S163	288.4	3.6	284.8	
S164	288.4	3.4	285.0	

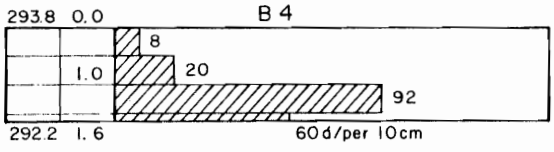
Hola nr.	Hæð á yfirborði m y.s.	Dýpi holu m	Hæð á botni holu m y.s.	Athugasemdir
S165	292.6	12.9	279.7	Fært um 1m.0.9m á fast v/hæl
S167	288.4	2.0	286.4	
S168	289.2	4.5	284.7	
S169	288.3	4.0	284.3	
S170	288.1	5.1	283.0	
S171	287.9	4.7	283.2	
S172	288.6	2.9	285.7	
S173	287.0	3.4	283.6	
S174	288.8	3.3	285.5	
S175	288.4	4.0	284.4	
S176	288.3	3.9	284.4	
S177	288.8	5.8	283.0	2m frá 0.8m fast,4m frá 0.9m
S178	290.4	7.0	283.4	
S179	287.8	3.8	284.0	
S180	287.8	5.3	282.5	
S181	288.6	3.9	284.7	
T1	285.1	2.8	282.3	
T2	287.7	1.5	286.2	
T3	285.4	1.0	284.4	
T4	291.6	9.2	282.4	
T5	288.4	2.7	285.7	
T6	288.3	4.9	283.4	
T7	288.8	1.5	287.3	
T8	289.6	2.4	287.2	
T9	288.3	2.2	286.1	
T10	289.5	4.7	284.8	

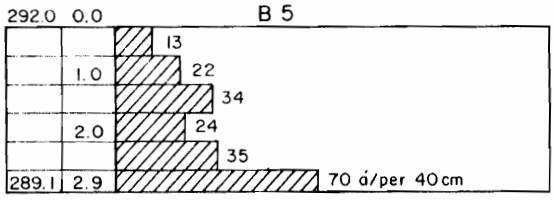


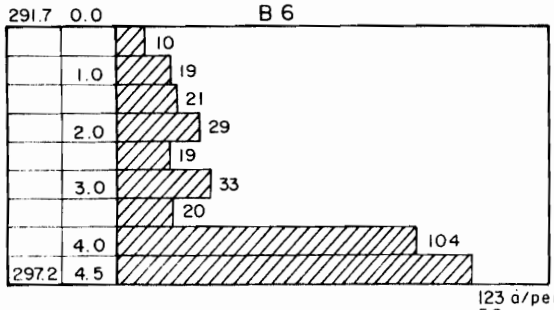


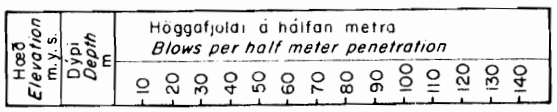


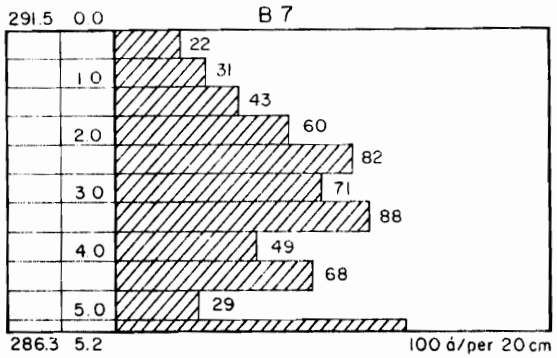


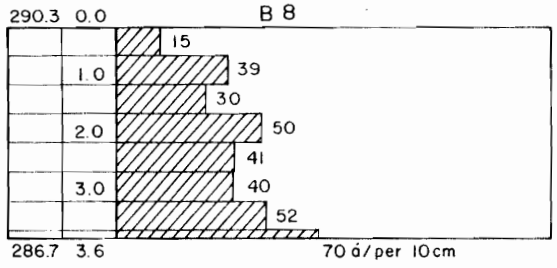


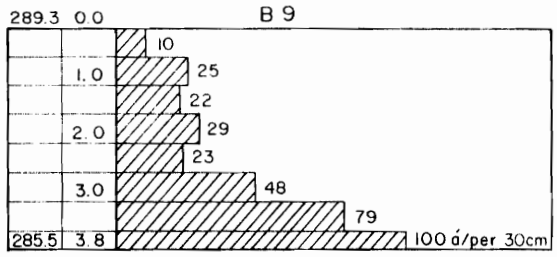


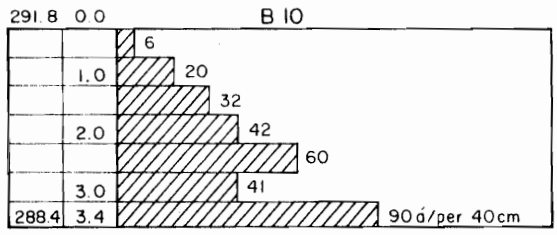












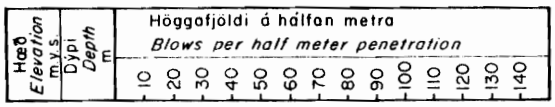
SKÝRINGAR: *EXPLANATION:*

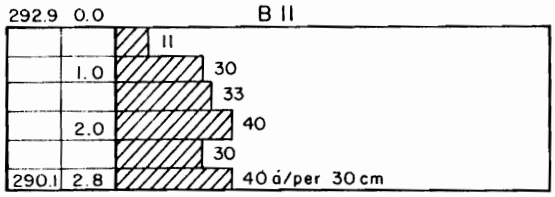
Þvermál stanga / *rod size 32mm*

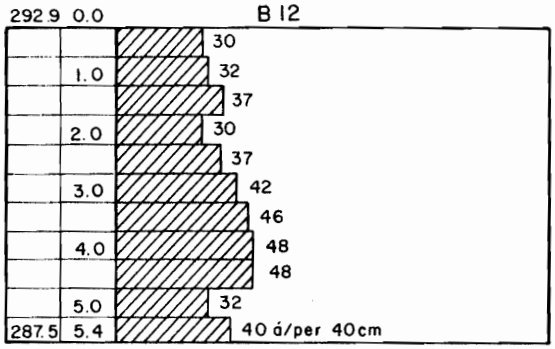
Þungi lóðs / *hammer weight 65kg*

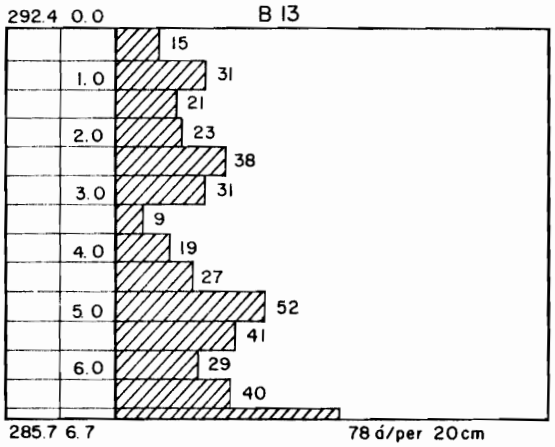
Fallhæð lóðs / *hammer drop 50cm*

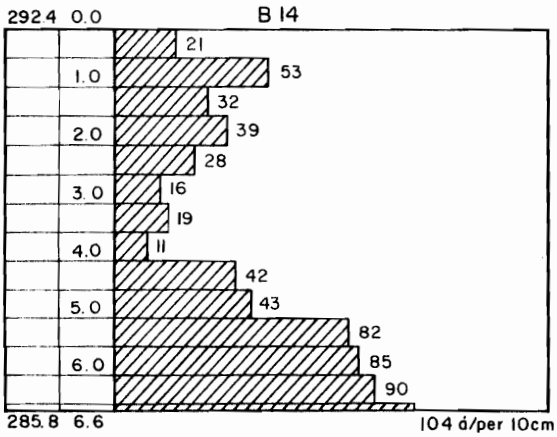
ORKUSTOFNUN		
Borró-borholur við Sultartanga		
29.5.'69 PI / I.S.	Tnr 44 Tnr 767	Fnr 8866
Blað 1 af 22	Borró-b B-277	

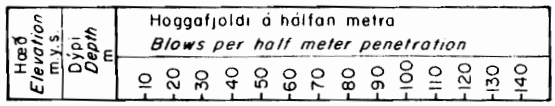


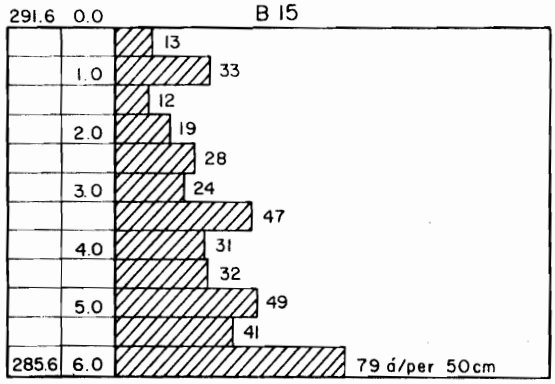


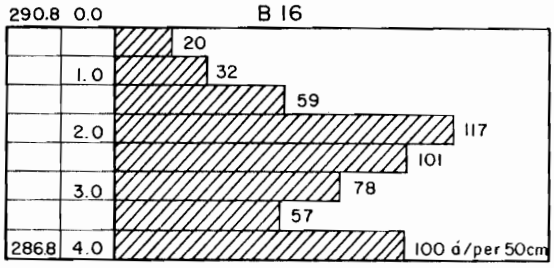


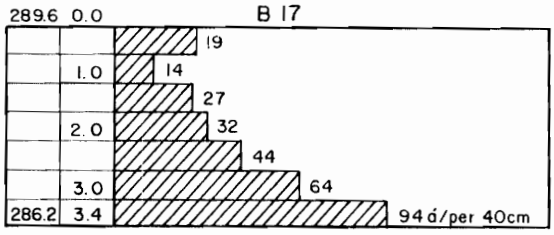


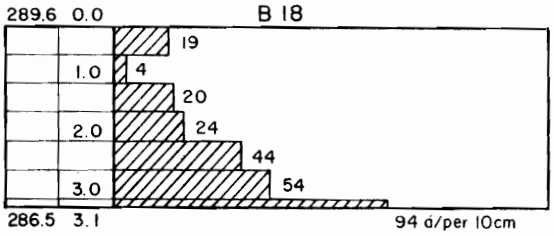








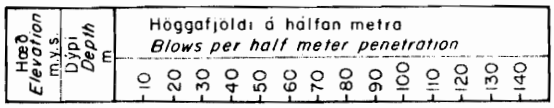


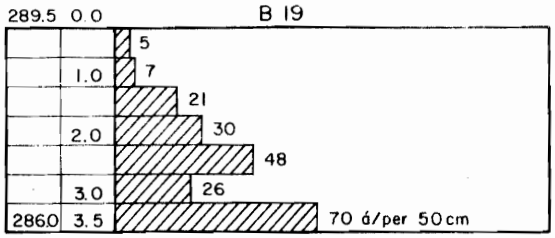


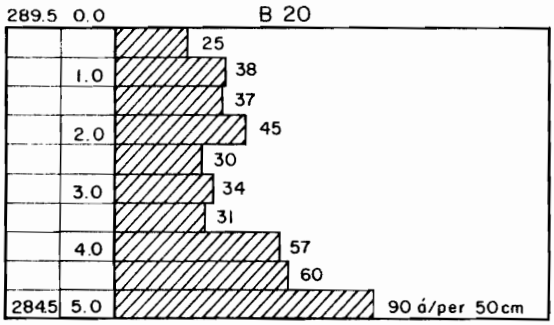
Skýringar á blaði 1

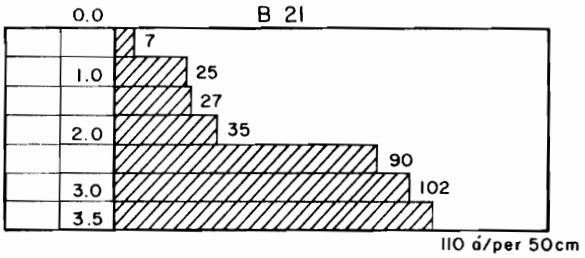
Explanation on sheet 1

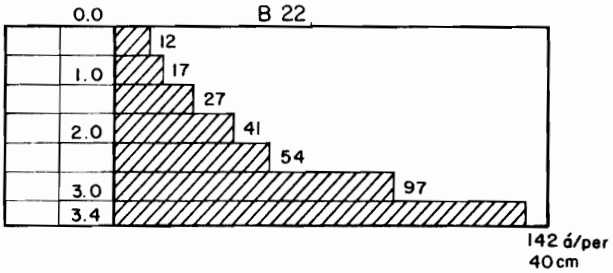
ORKUSTOFNUN			
Borró-borholur við Sultartanga			
29.5.'69 P1./I.S.	Tnr. 45 Tnr. 768	Fnr. 8867	
Blað 2 af 22	Borró-b B-277		

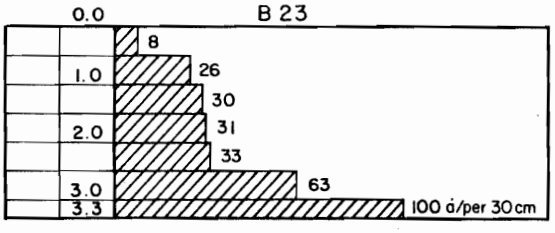








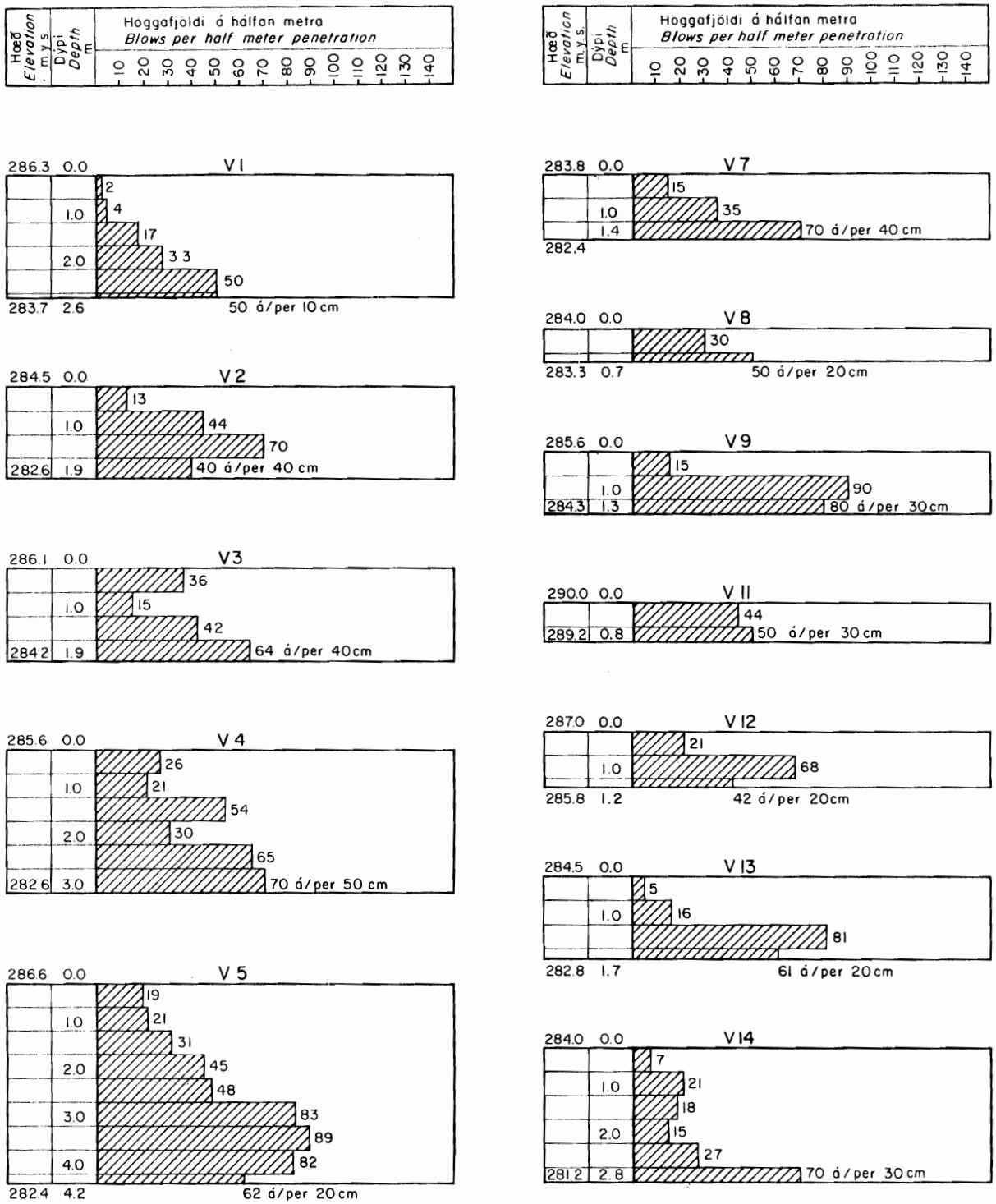




Skýringar á blaði I

Explanation on sheet I

ORKUSTOFNUN		
Borró-borholur við Sultartanga		
30.5.'69 P.I./I.S.	Tnr. 46 Tnr. 769	Fnr. 8868
Blað 3 af 22	Borró-b B-277	



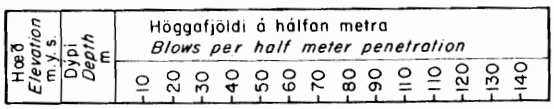
SKÝRINGAR: *EXPLANATION:*

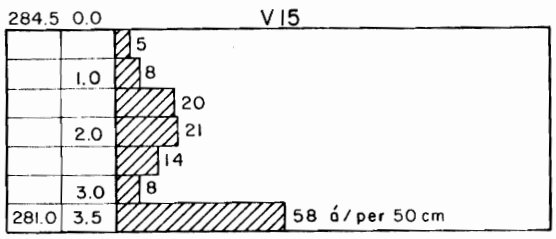
Þvermál stanga / *rod size 32mm*

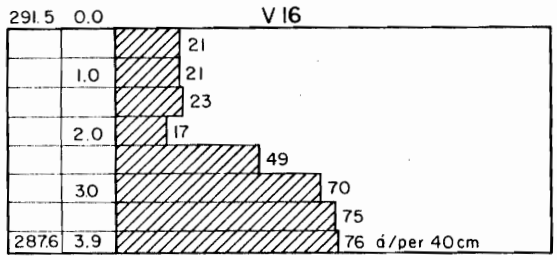
Þungi lóðs / *hammer weight 65 kg*

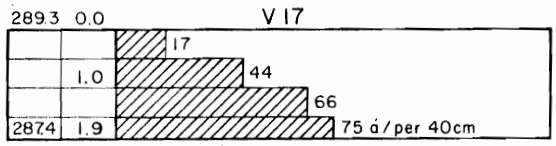
Fallhæð lóðs / *hammer drop 50 cm*

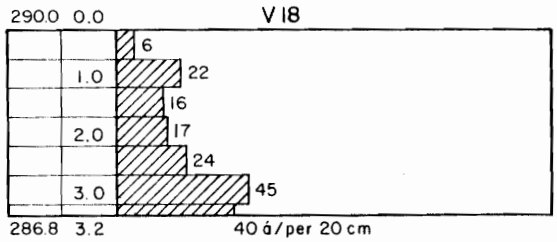
ORKUSTOFNUN		
Borró-borholur við Sultartanga		
5.2.69 PI./IS.	Tnr. 28a Tnr. 741	Fnr. 8713
Blað 4 af 22	Borró-b B-277	

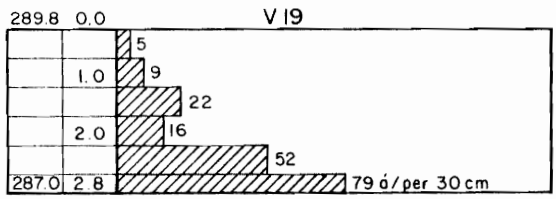


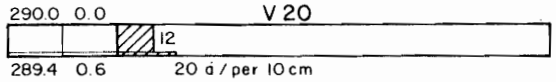


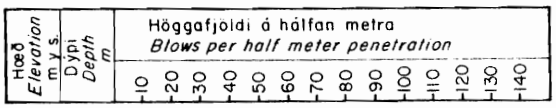


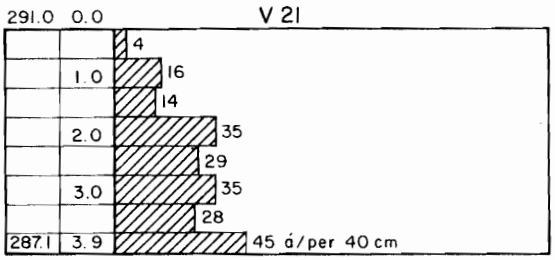


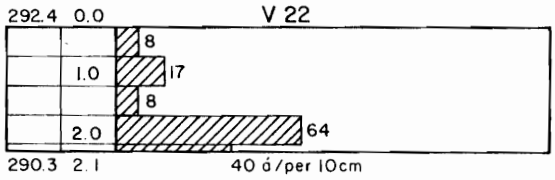


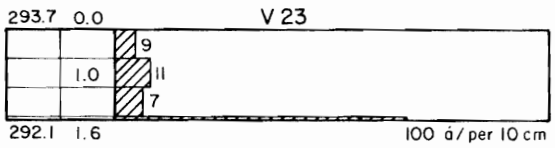


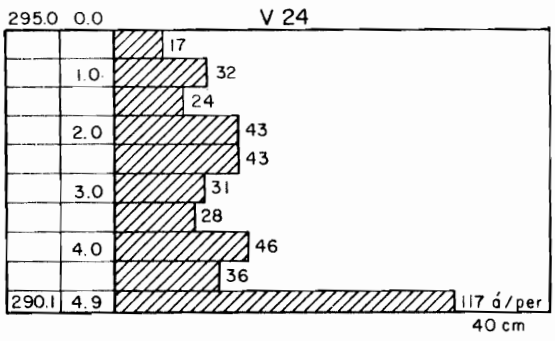


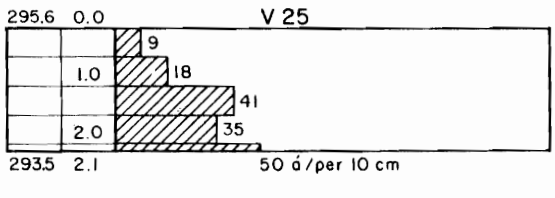








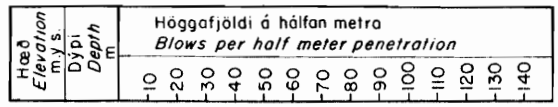


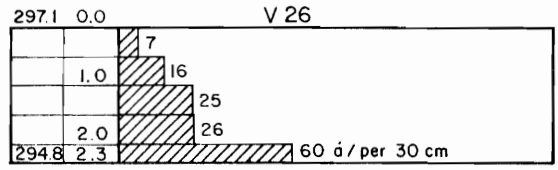


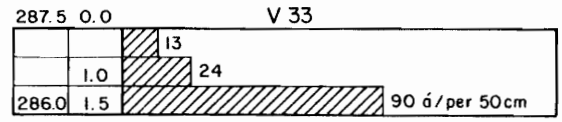
Skýringar á blaði 1

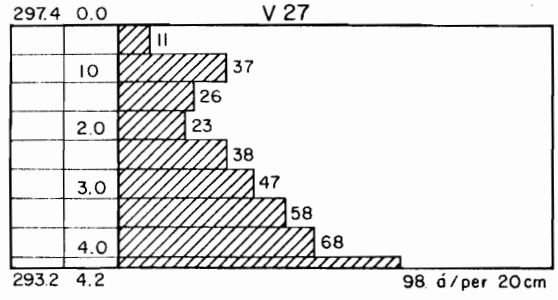
Explanation on sheet 1

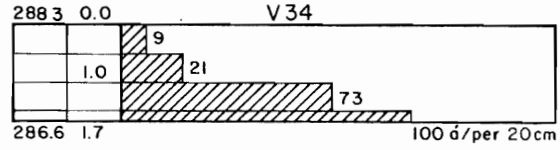
ORKUSTOFNUN			
Borró-borholur við Sultartanga			
6.2.69 P.I./I.S.	Tnr. 28b Tnr. 742	Fnr. 8714	
Blað 5 af 22	Borró-b B-277		

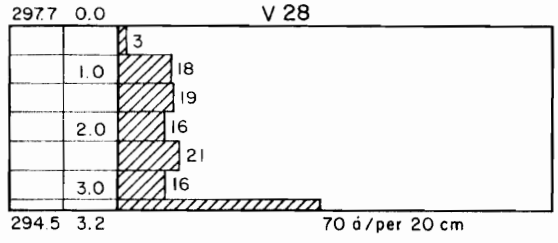


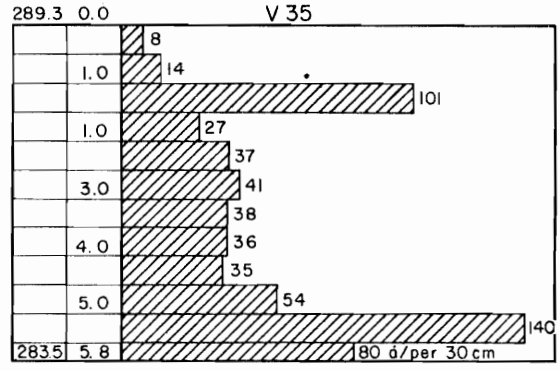


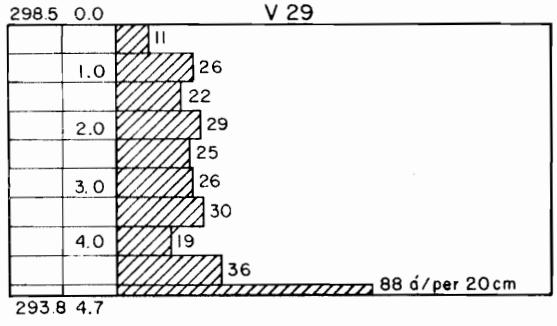


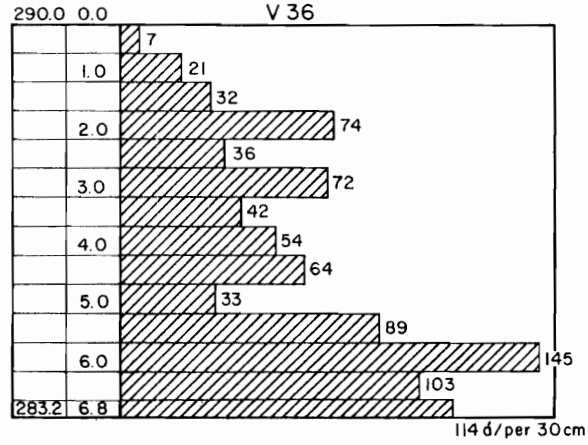


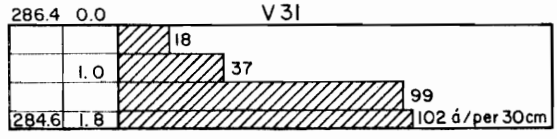


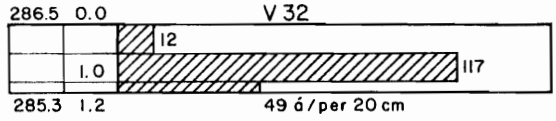








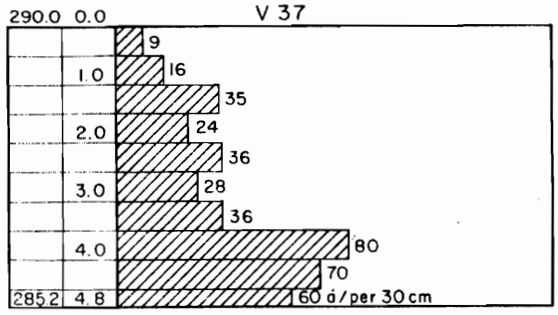


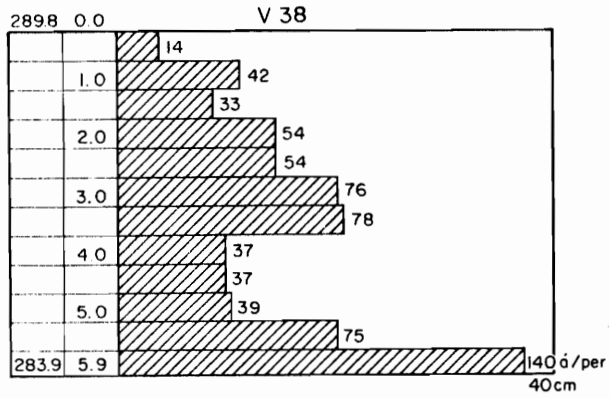


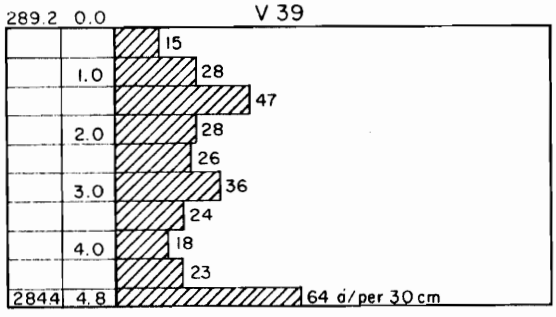
Skýringar á blaði I

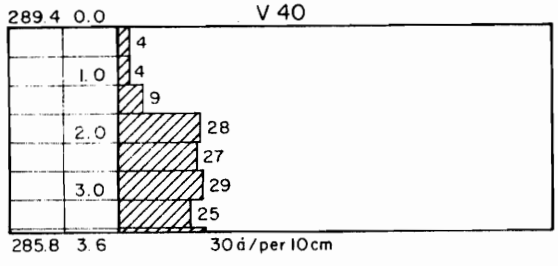
Explanation on sheet I

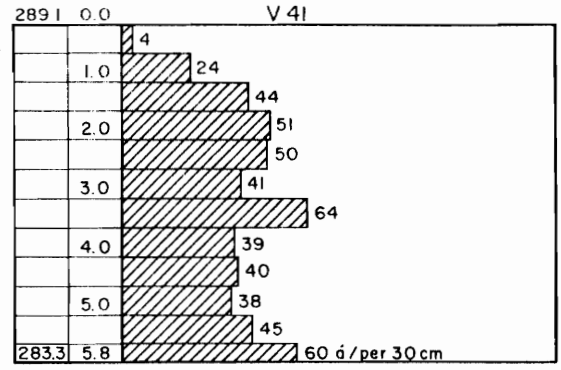
ORKUSTOFNUN		
Borró-boranir við Sultartanga		
7.2.'69 P.I./I.S	Tnr. 29 Tnr. 743	Fnr. 8715
Blað 6 of 22	Borró-b. B-277	

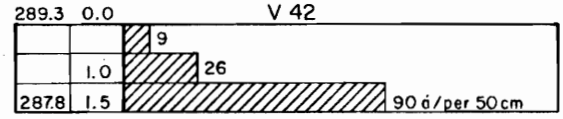


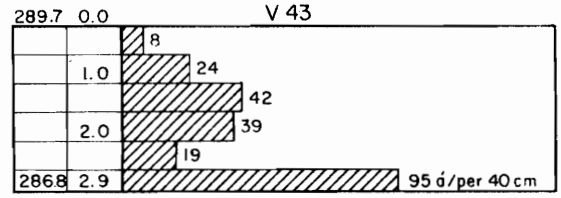


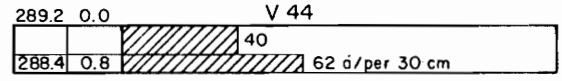


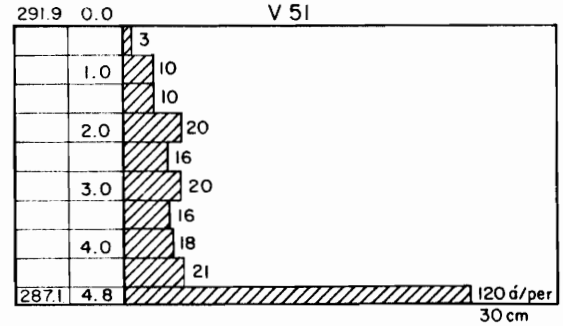








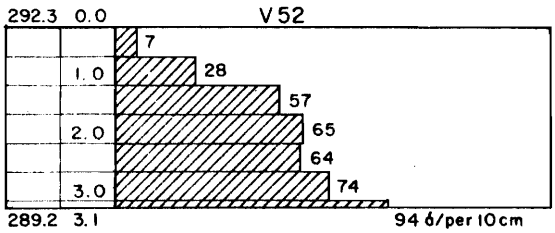


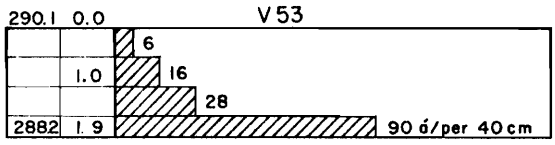


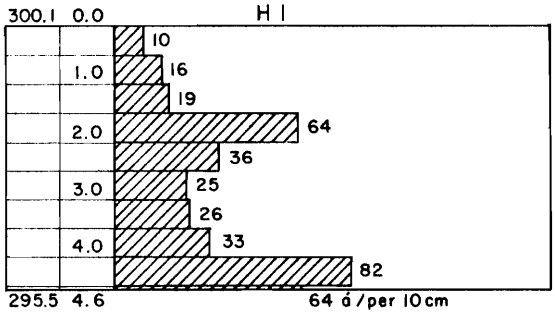
Skýringar á blaði 1

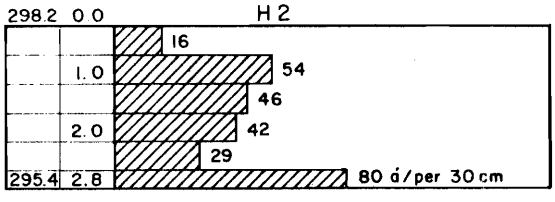
Explanation on sheet 1

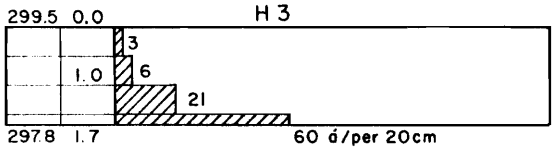
ORKUSTOFNUN			
Borró-borholur við Sultartanga			
12.2.69 PI/LS	Tnr.30	Tnr.744	Fnr. 8716
Blað 7 af 22	Borró-b B-277		

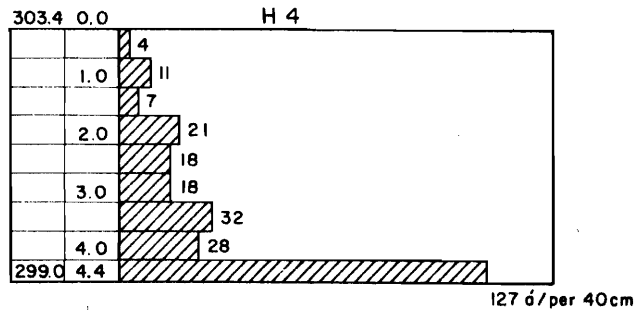


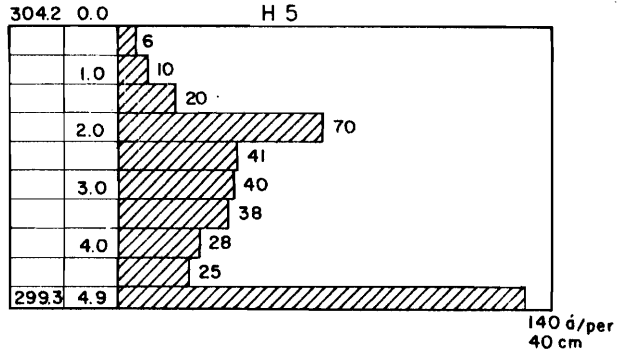


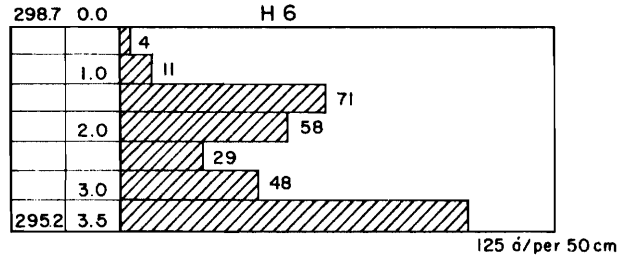


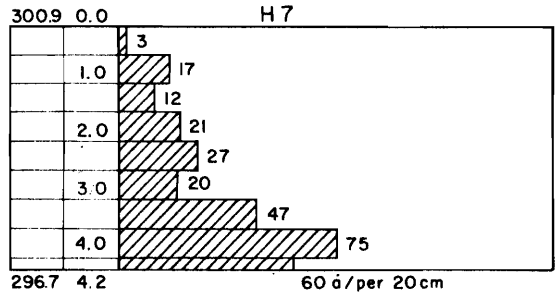








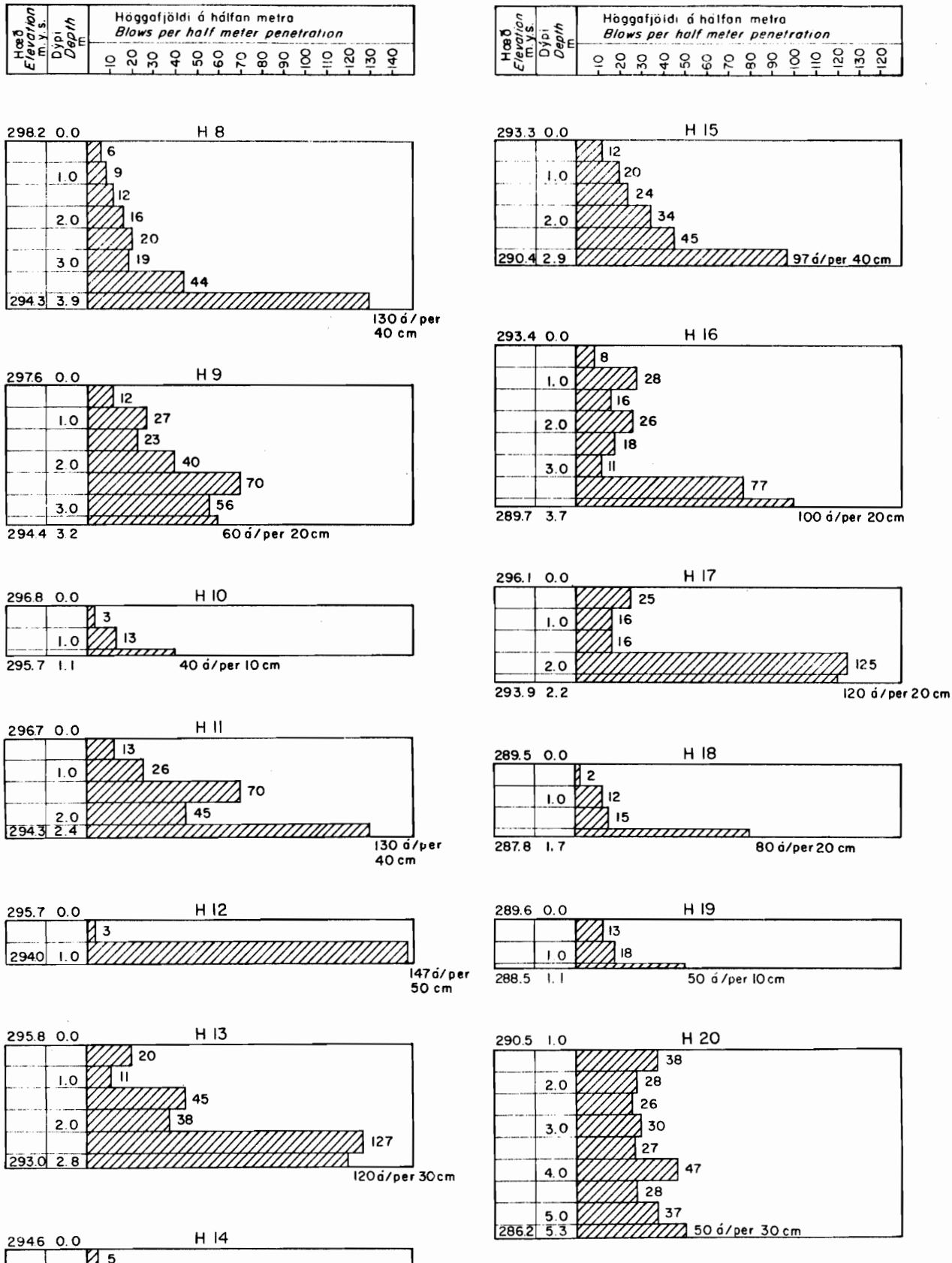




Skýringar á blaði I

Explanation on sheet I

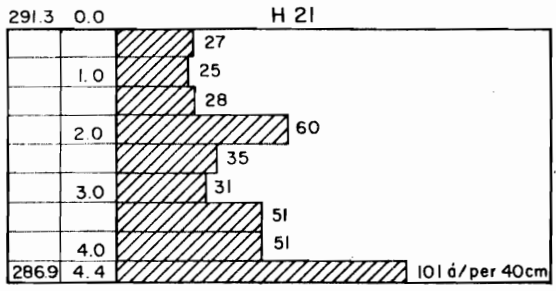
ORKUSTOFNUN			
Borró-borholur við Súltartanga			
14.2.69 P.I./IS	Tnr. 31	Tnr. 745	Fnr. 8717
Blað 8 af 22	Borró-b B-277		

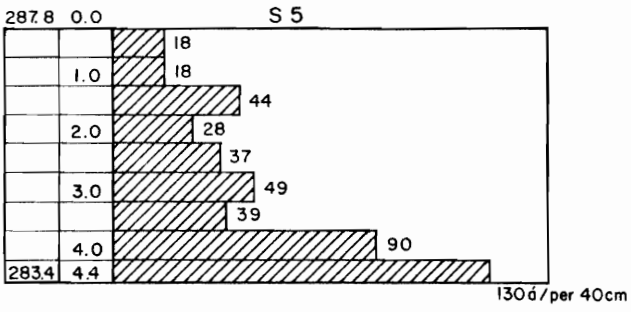


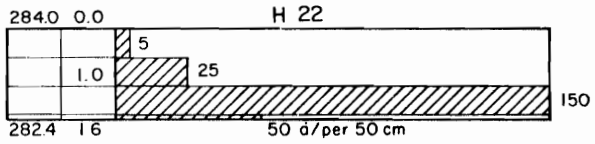
Skýringar á blaði 1

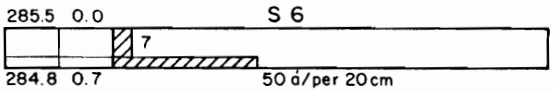
Explanation on sheet 1

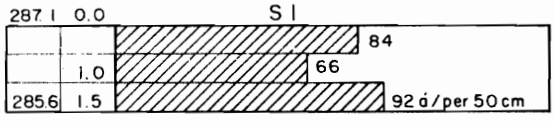
ORKUSTOFNUN		
Borró-borholur við Sultartanga		
244 '69 P1./1S. Tnr. 32 Tnr. 746		Fnr. 8718
Blað 9 af 22	Borró-bB-277	

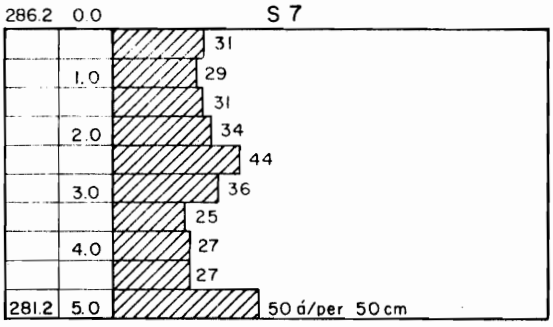


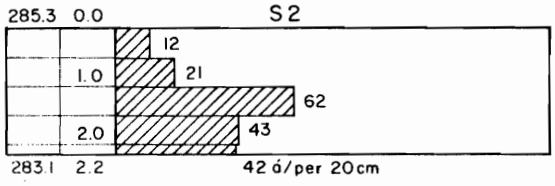


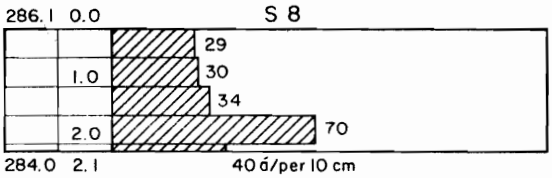


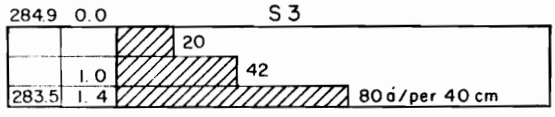


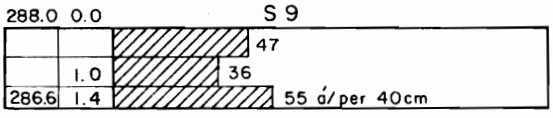


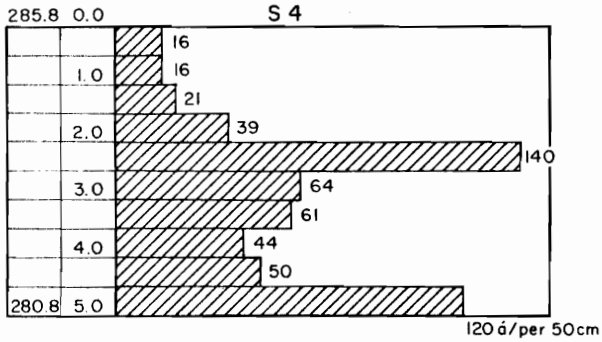






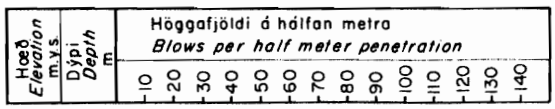


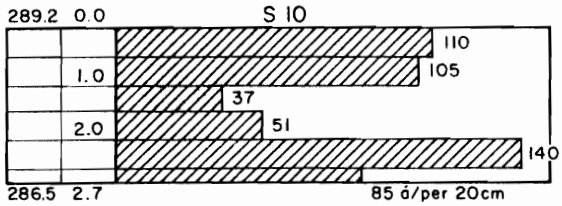


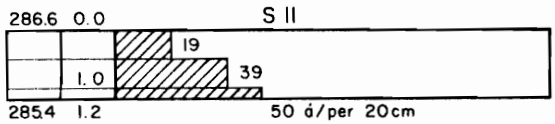


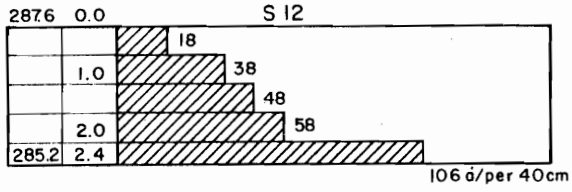
Skýringar á blaði I
Explanation on sheet

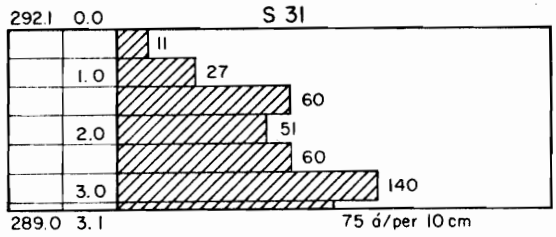
ORKUSTOFNUN			
Borró-borholur við Sultartanga			
28.4.'69 P.I./IS	Tnr. 33	Tnr. 747	Fnr. 8719
Blað 10 af 22	Borró-b B-277		

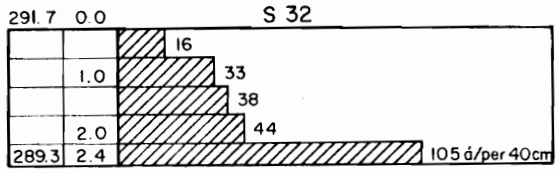


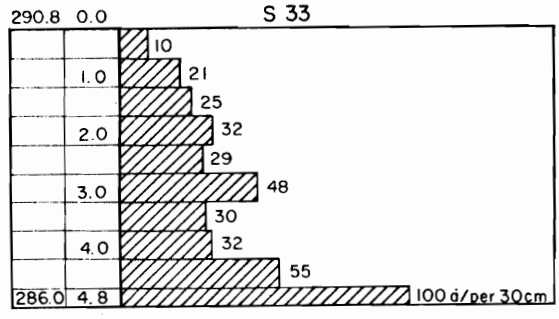


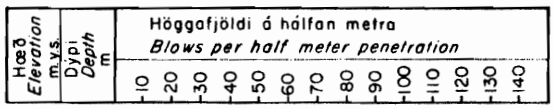


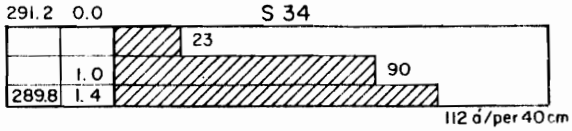


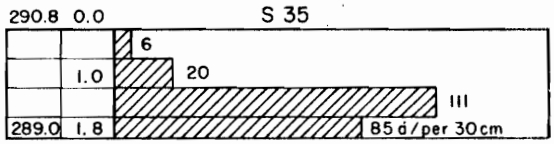


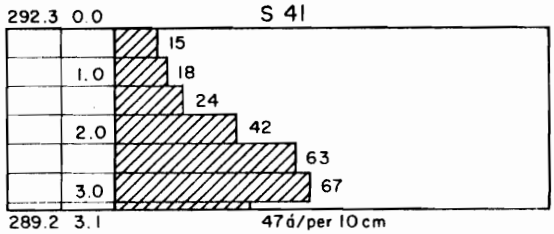


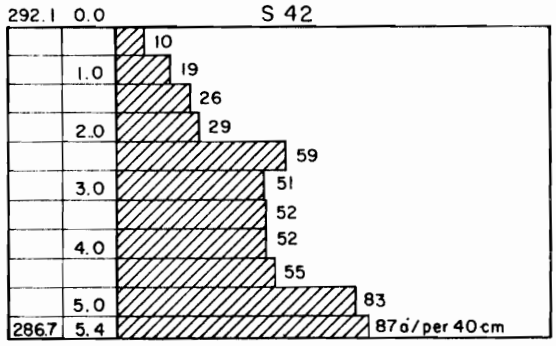


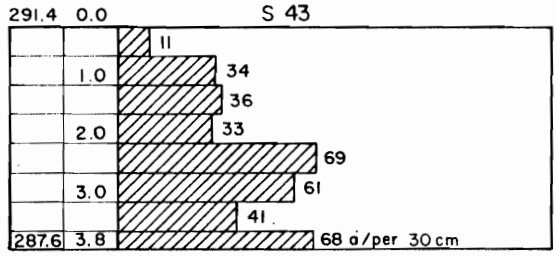








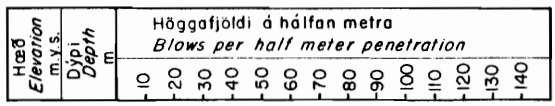


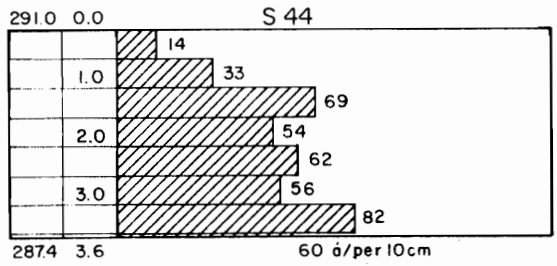


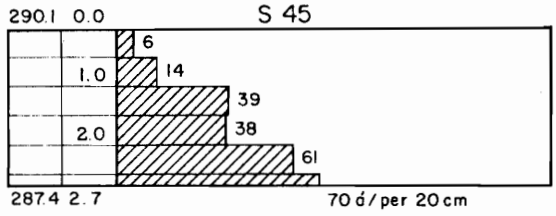
Skýringar á blaði I

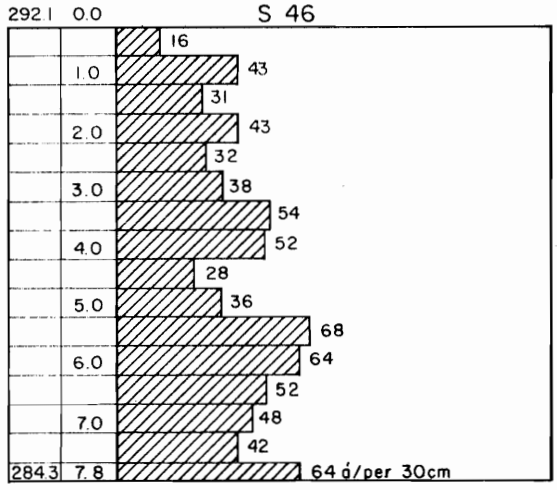
Explanation on sheet I

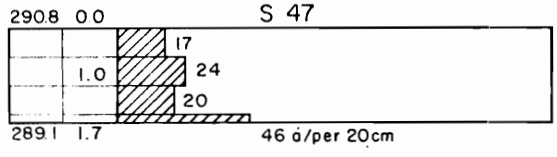
ORKUSTOFNUN		
Borró-borholur við Sultartanga		
29.4.'69 PI./IS	Tnr. 34 Tnr. 748	Fnr. 8720
Blað 11 af 22	Borró-b B-277	

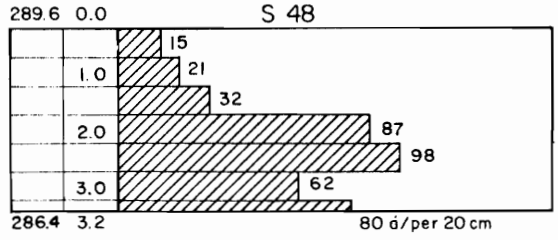


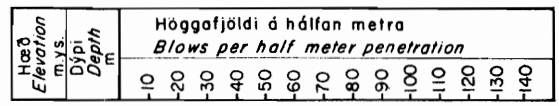


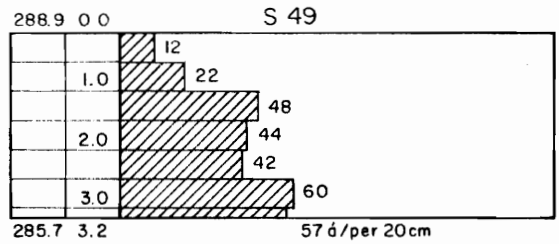


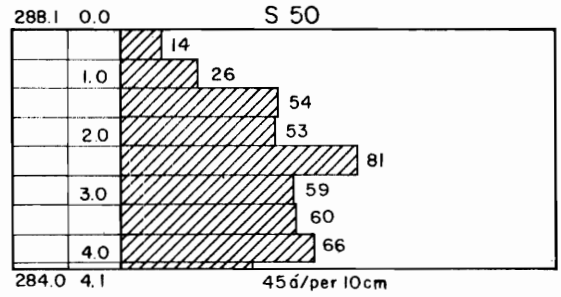


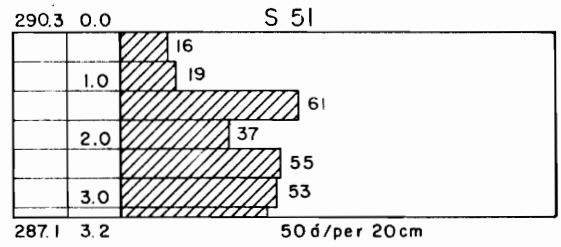


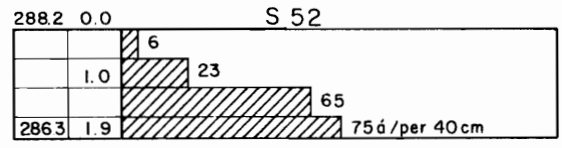


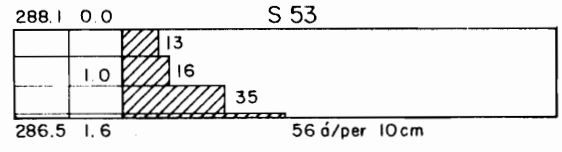








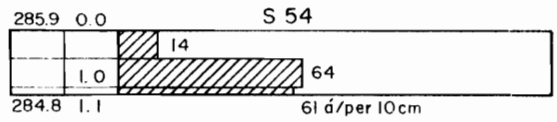


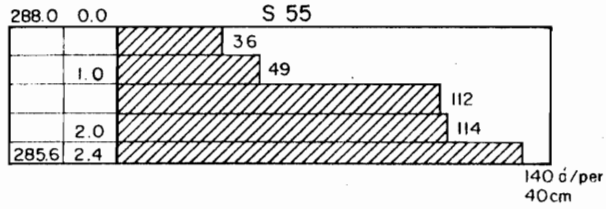


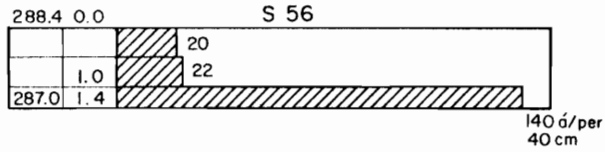
Skýringar á blaði I

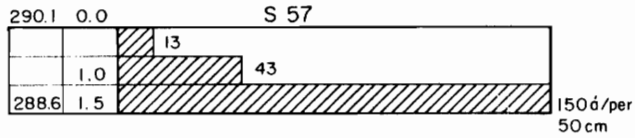
Explanation on sheet I

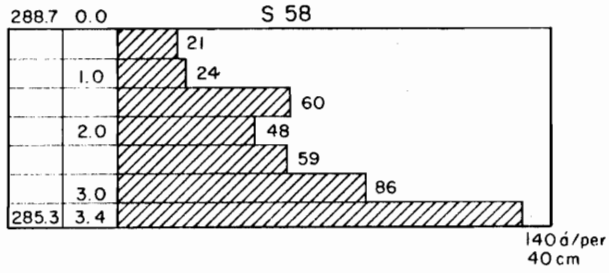
ORKUSTOFNUN		
Borró-borholur við Sultartanga		
30.4.68 PI/LS	Tnr. 35 Tnr. 749	Fnr. 8721
Blað 12 af 22	Borró-b B-277	

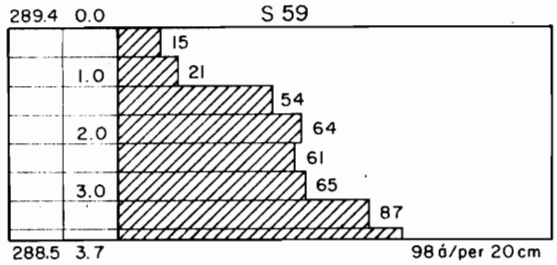


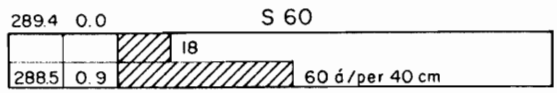


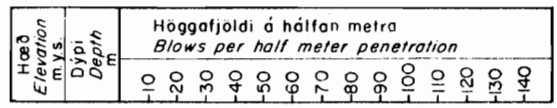


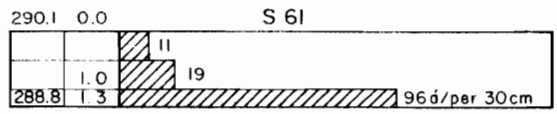


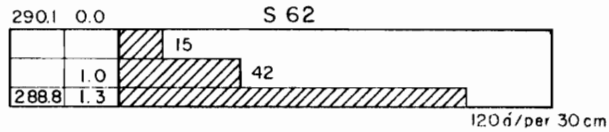


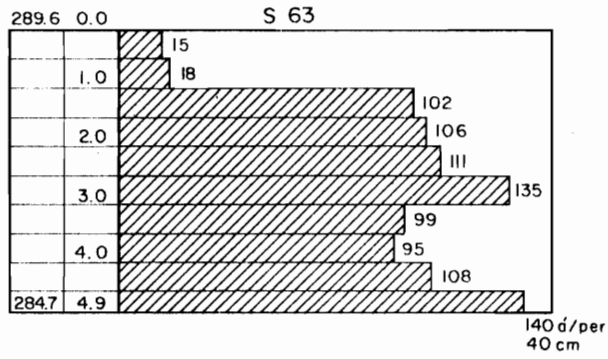


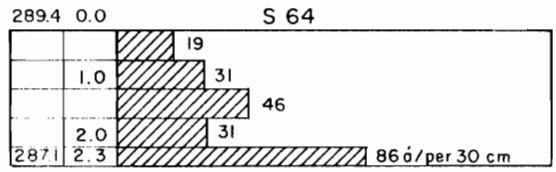


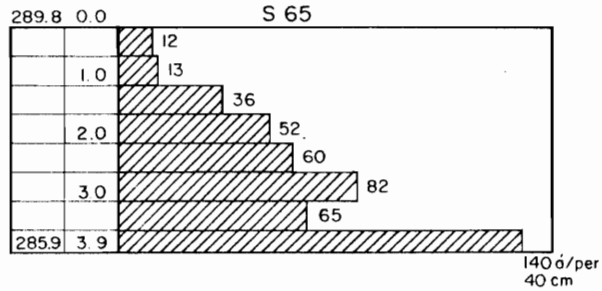








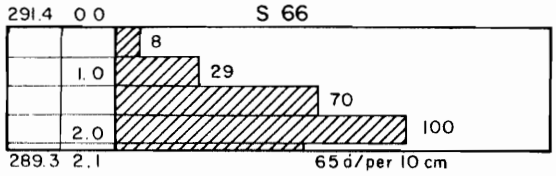


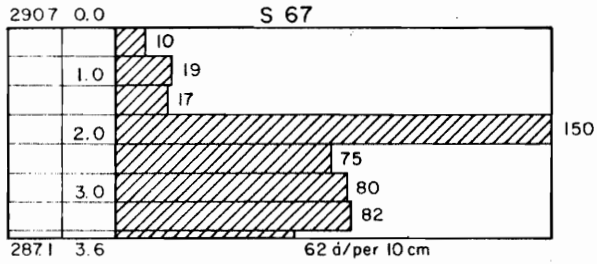


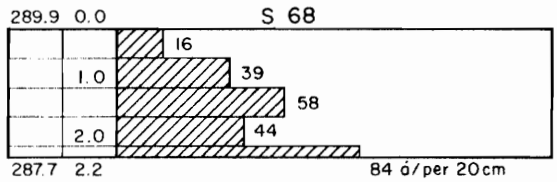
Skýringar á blaði I

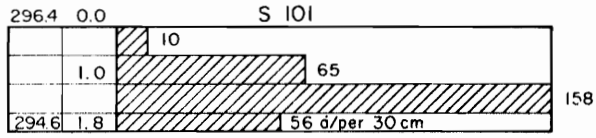
Explanation on sheet I

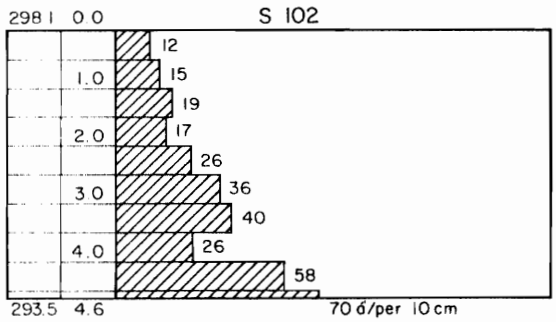
ORKUSTOFNUN		
Borró-borholur við Sultartanga		
12.5.'69 P.I./I.S.	Tnr. 36 Tnr. 750	Fnr. 8722
Blað 13 af 22	Borrób. B-277	

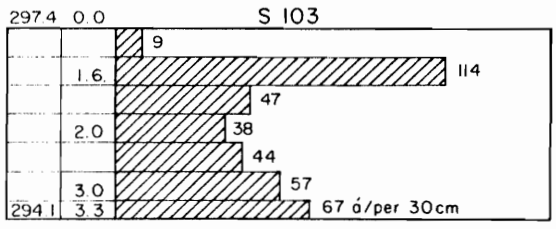


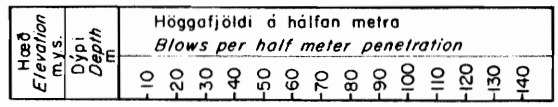


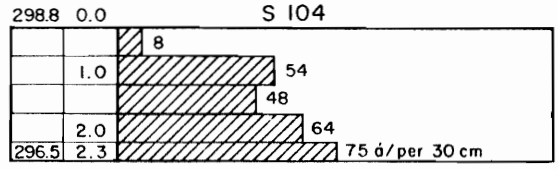


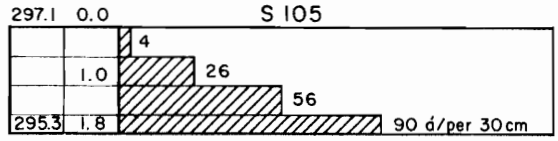


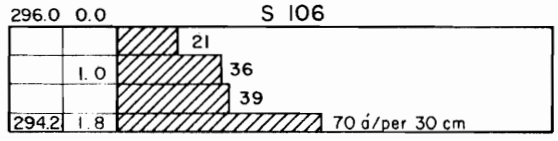


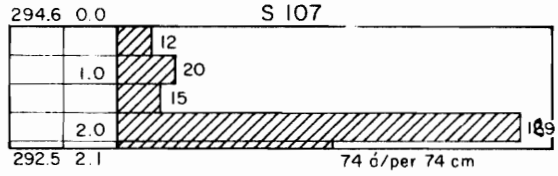


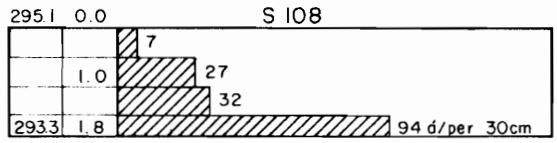


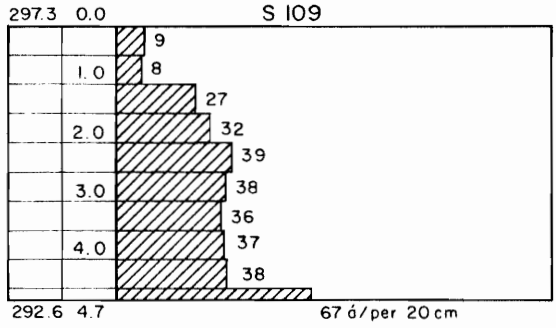






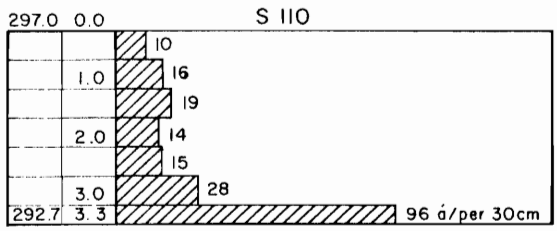


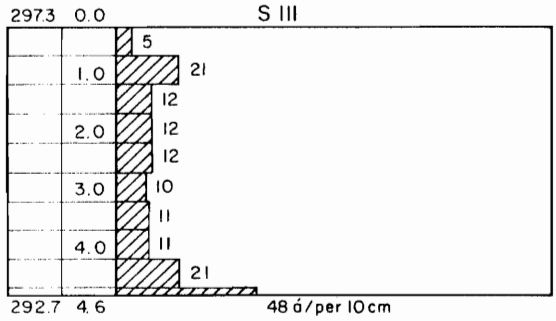


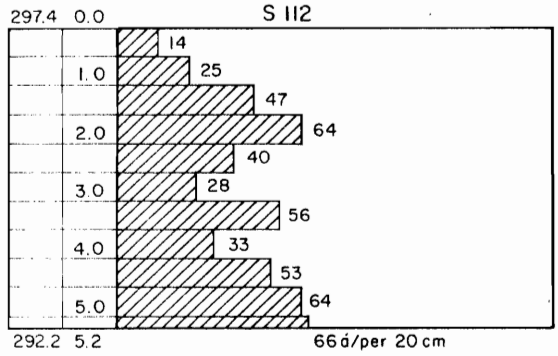


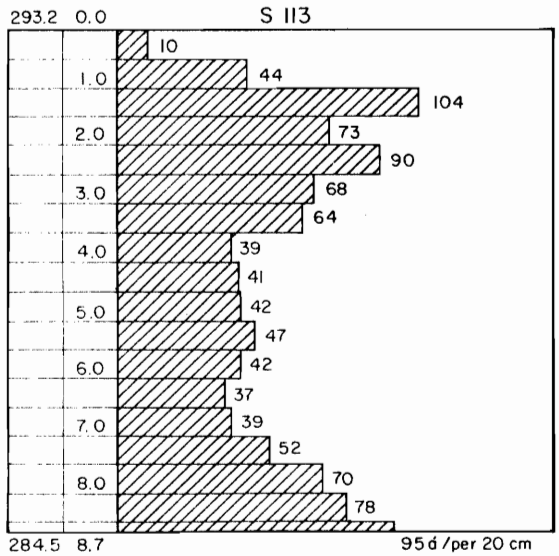
Skýringar á blaði 1
Explanation on sheet 1

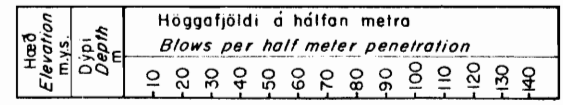
ORKUSTOFNUN		
Borró-borholur við Sultartanga		
14.5.'69 PI./I.S.	Tnr. 37 Tnr. 751	Fnr. 8723
Blað 14 af 22	Borra-b B-277	

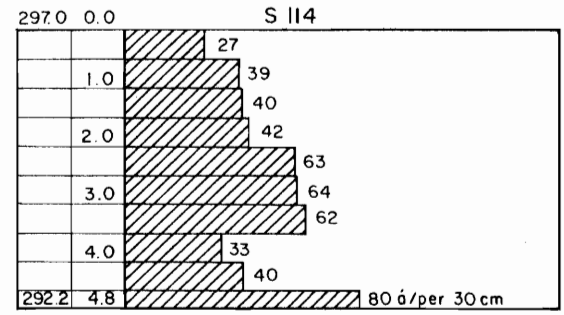


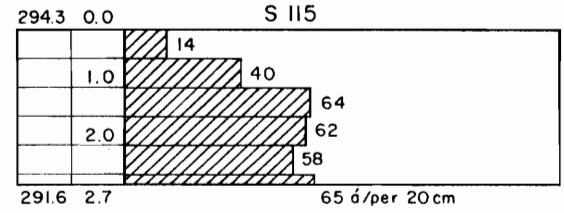


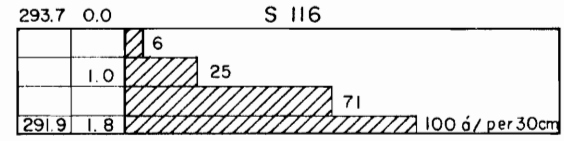


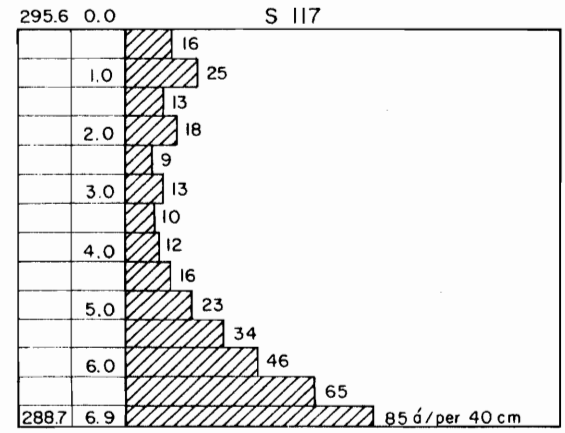












Skýringar á blaði 1

Explanation on sheet 1

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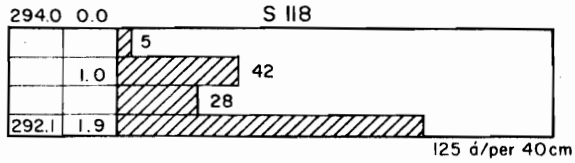
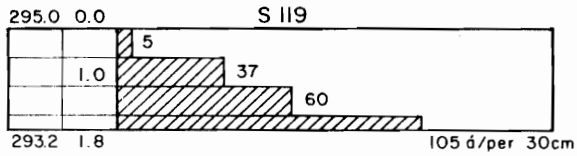
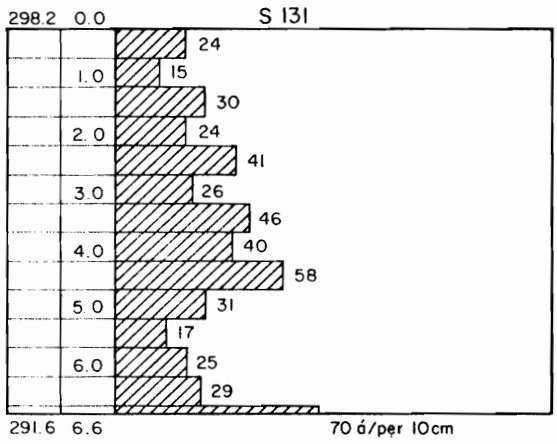
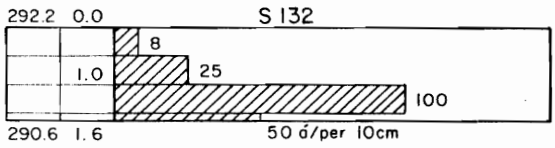
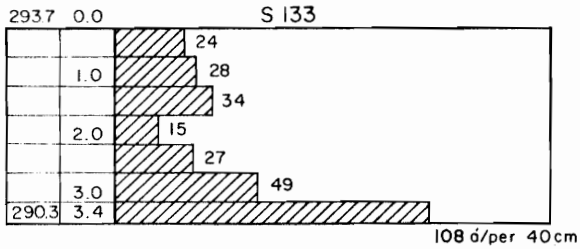
Borró-borholur við Sultartanga		
16.5.'69 P1./I.S.	Tnr. 38 Tnr. 752	Fnr. 8724
Blað 15 af 22	Borró-bB-277	

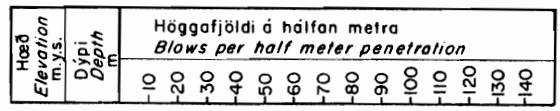


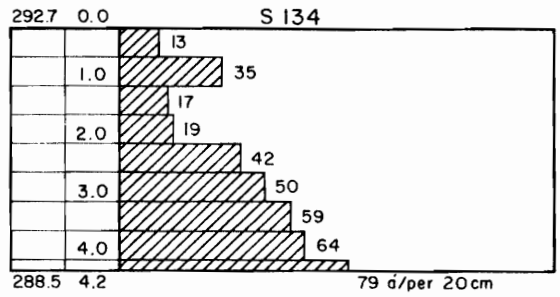


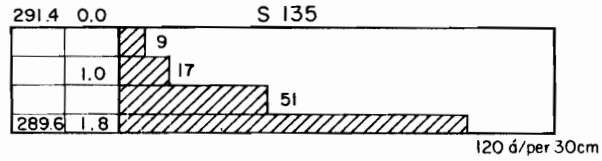


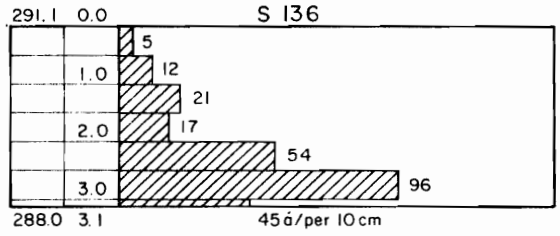


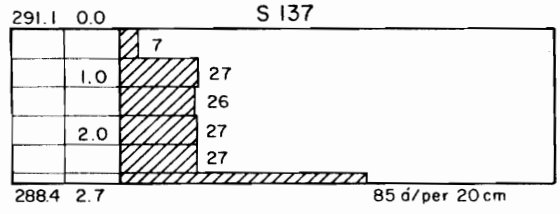


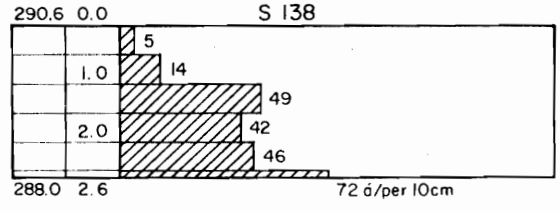








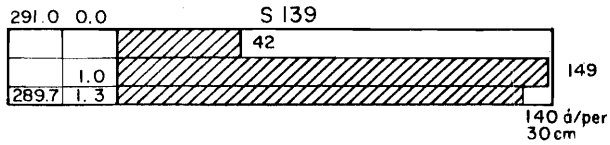


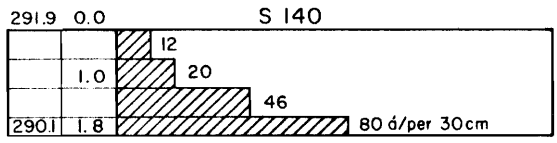


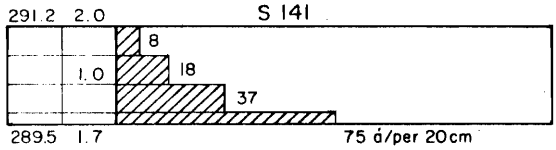
Skýringar á blaði I

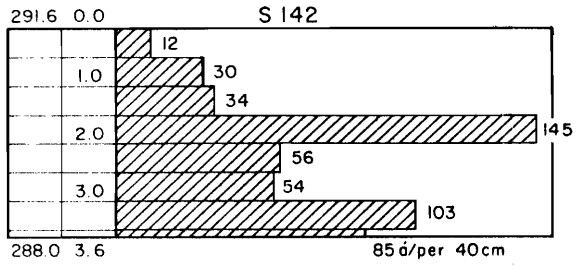
Explanation on sheet I

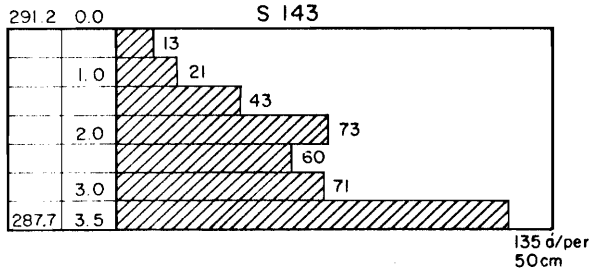
ORKUSTOFNUN		
Borró-borholur við Sultartanga		
16.5.'69 P.I./I.S.	Tnr. 39 Tnr. 753	Fnr. 8725
Blað 16 af 22	Borró-bB-277	

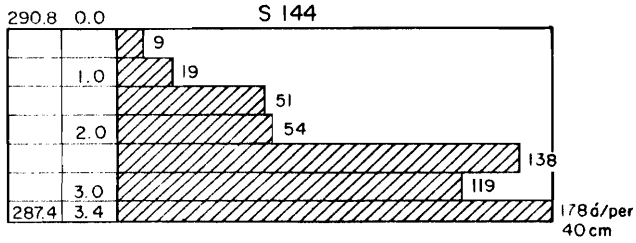


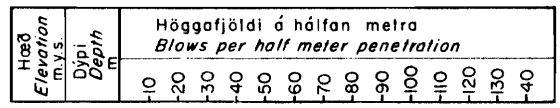


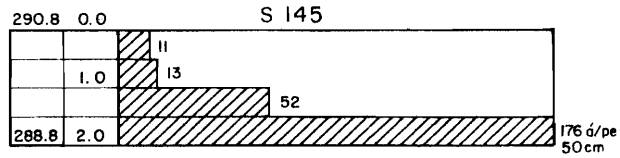


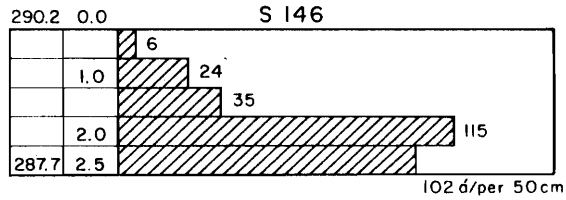


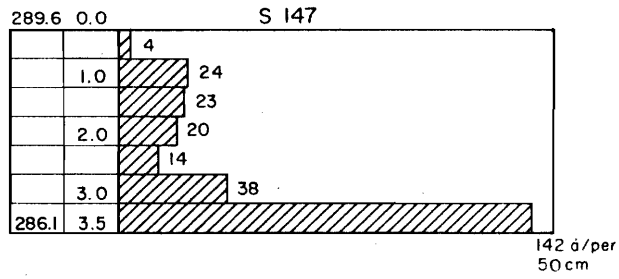


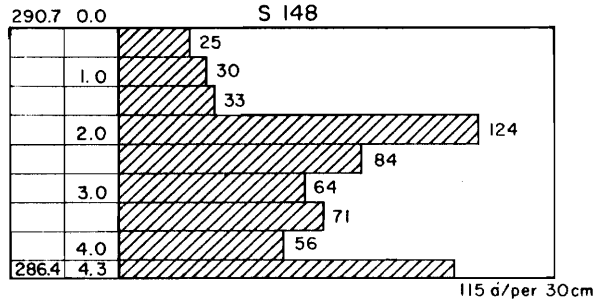


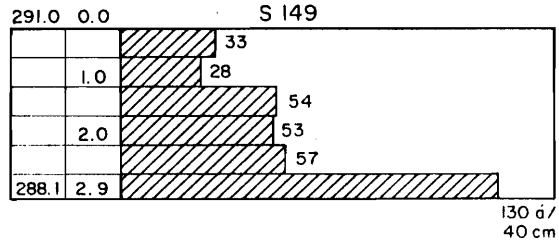






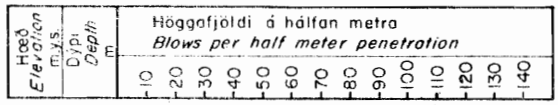


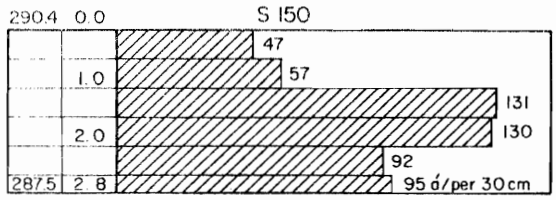


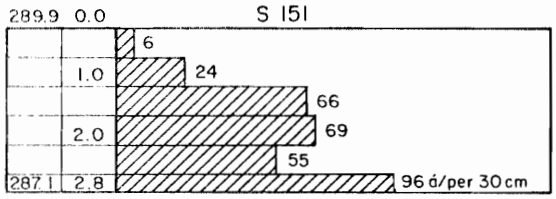


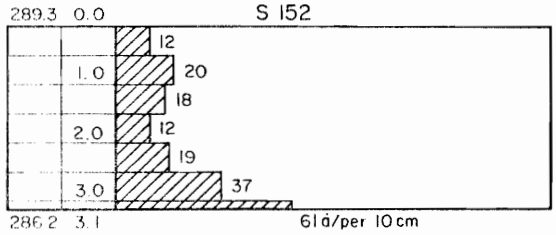
Skýringar á blaði I
Explanation on sheet I

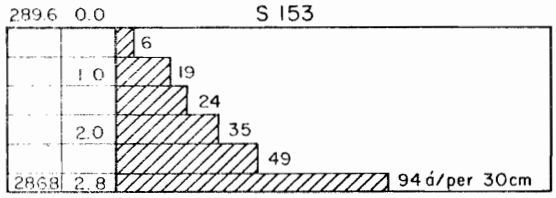
ORKUSTOFNUN		
Borró-borholur við Sultartanga		
16.5.69 PI./I.S.	Tnr. 40 Tnr. 754	Fnr. 8726
Blað 17 af 22	Borró-b.B-277	

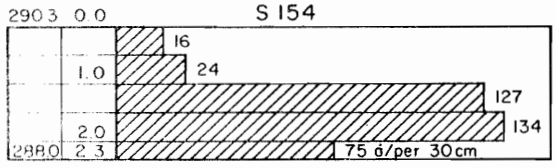


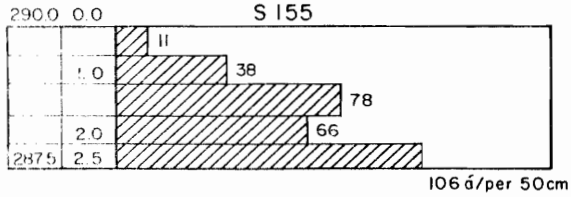


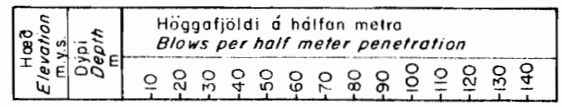


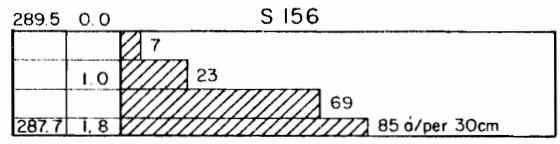


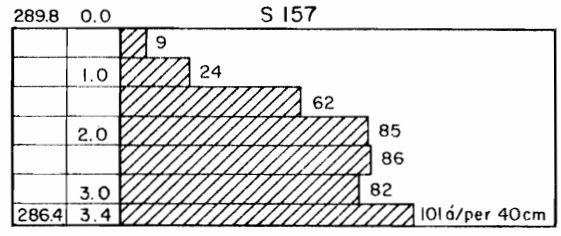


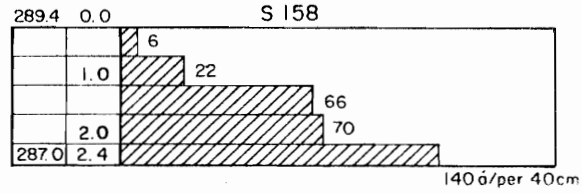


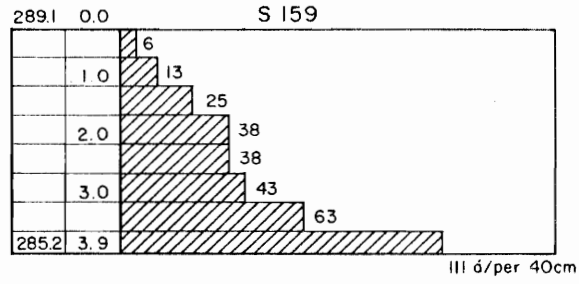


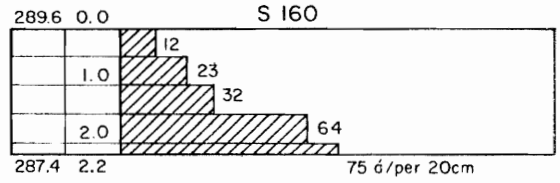


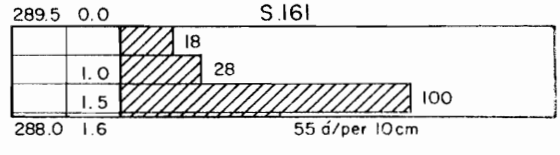








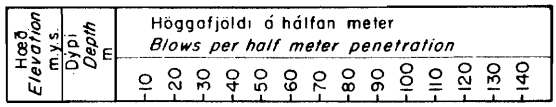


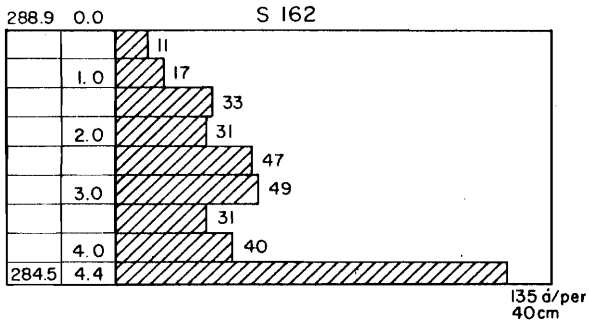


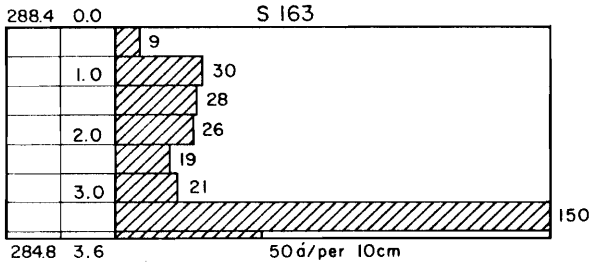
Skýringar á blaði I

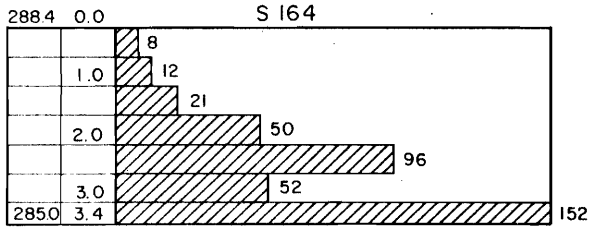
Explanation on sheet I

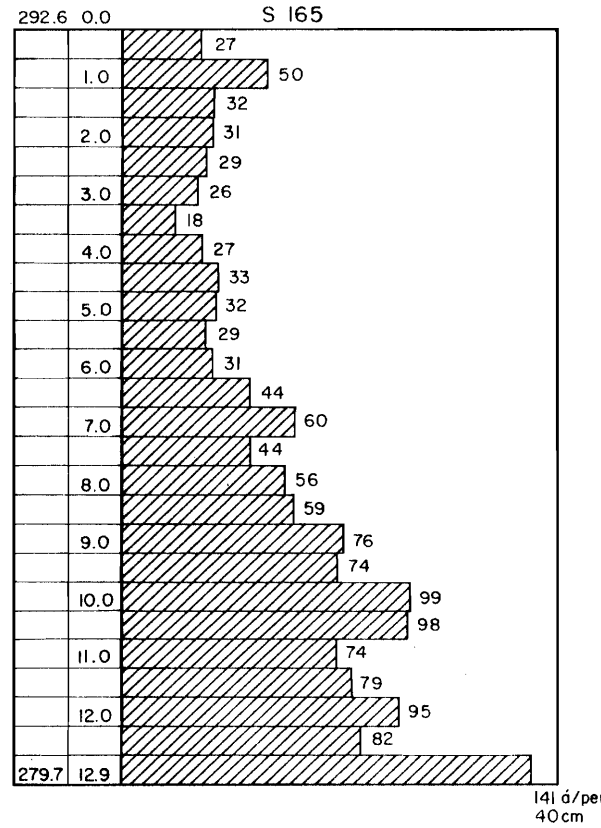
ORKUSTOFNUN		
Borró-borholur við Suðurlanga		
21.5.69 PI./I.S.	Tnr. 41 Tnr. 755	Fnr. 8727
Blað 18 af 22	Borró-b B-277	

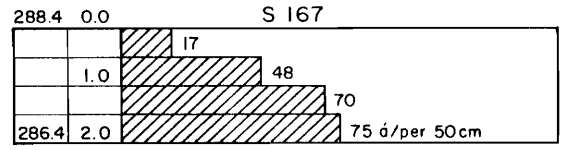


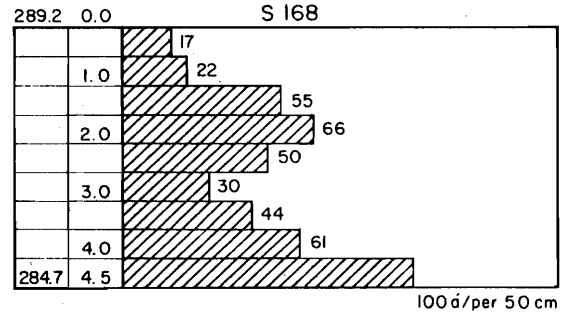








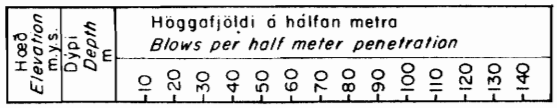


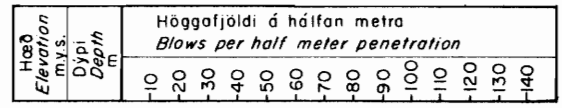


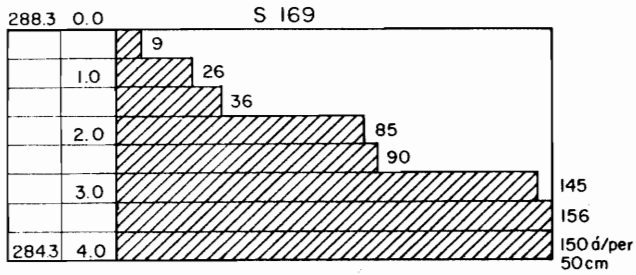
Skýringar á blaði I

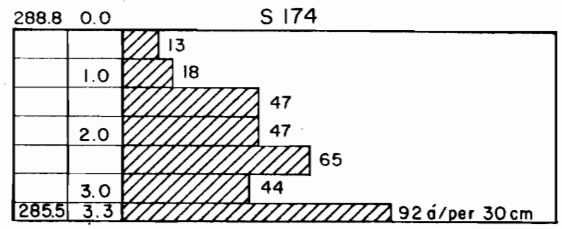
Explanation on sheet I

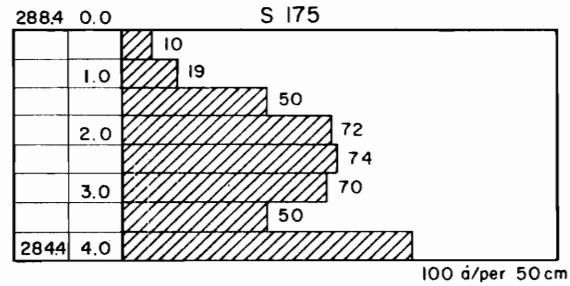
ORKUSTOFNUN		
Borró-borholur við Sultartanga		
22.5.69 P.I./I.S.	Tnr.42 Tnr.756	Fnr. 8728
Blað 19 af 22	Borró-b B-277	

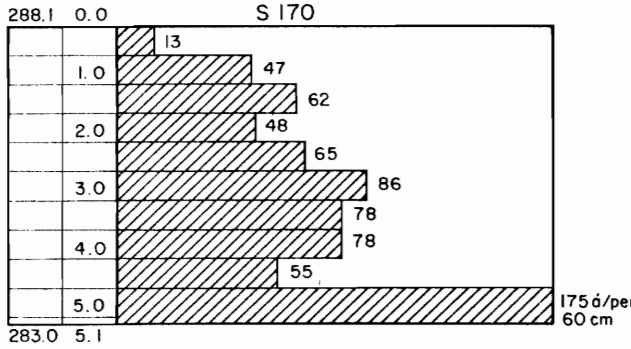


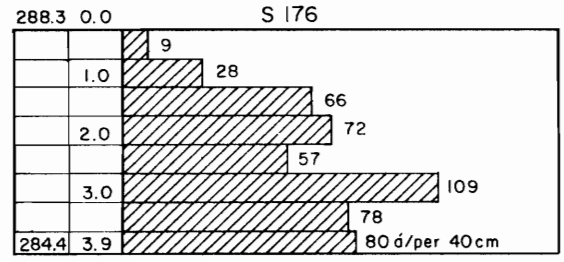


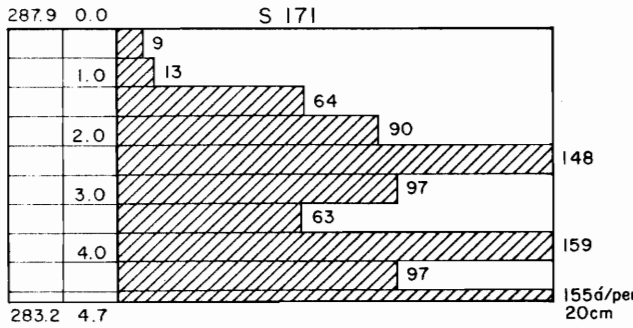


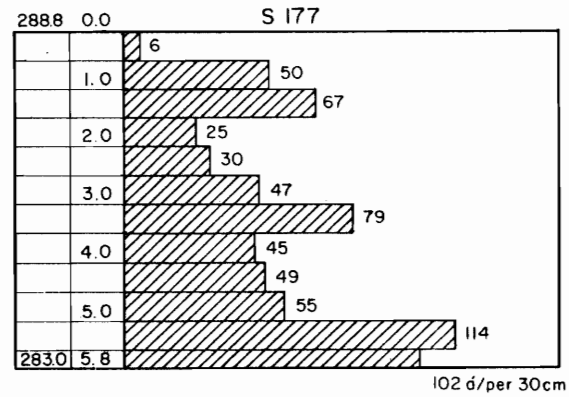


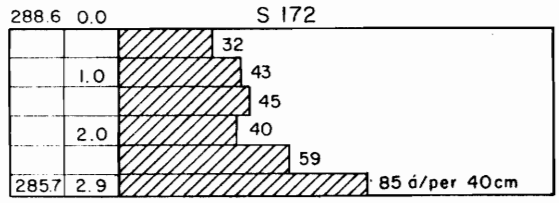




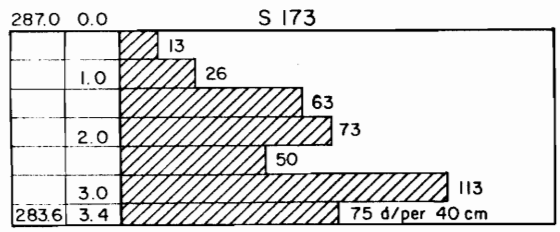




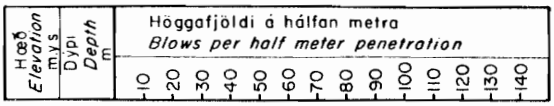


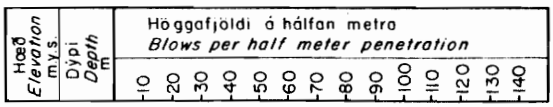


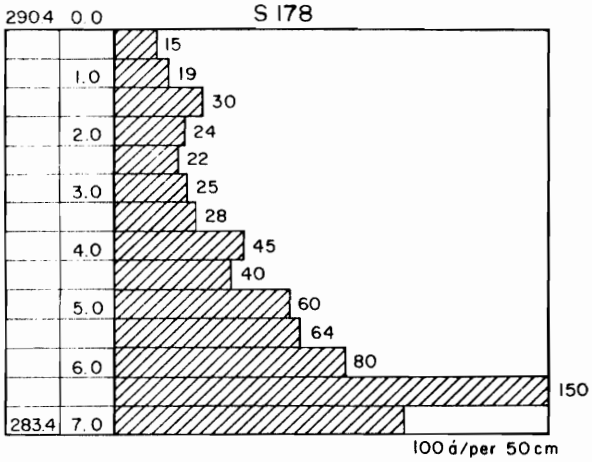
Skýringar á blaði 1
Explanation on sheet 1

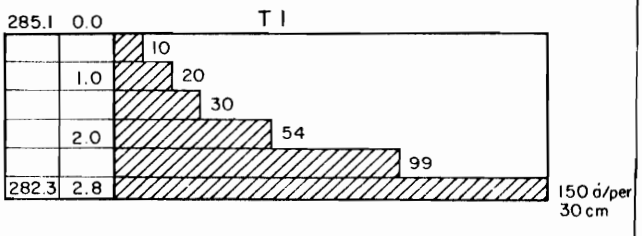


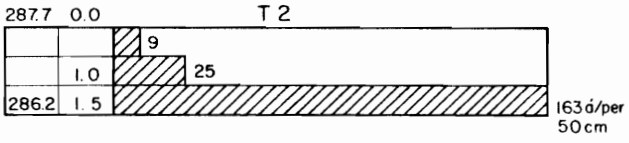
ORKUSTOFNUN		
Borró-borholur við Sultartanga		
23.5.'69 PI./I.S.	Tnr. 43 Tnr. 757	Fnr. 8729
Blað 20 af 22	Borró-bB-277	

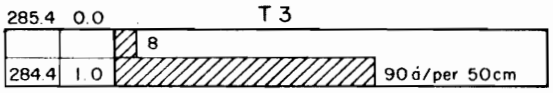


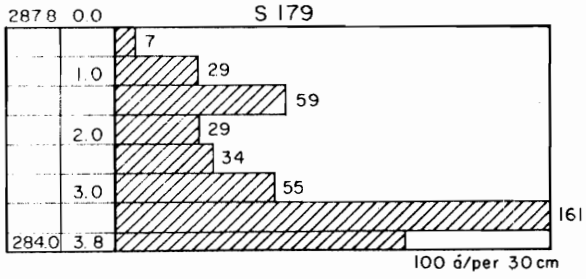


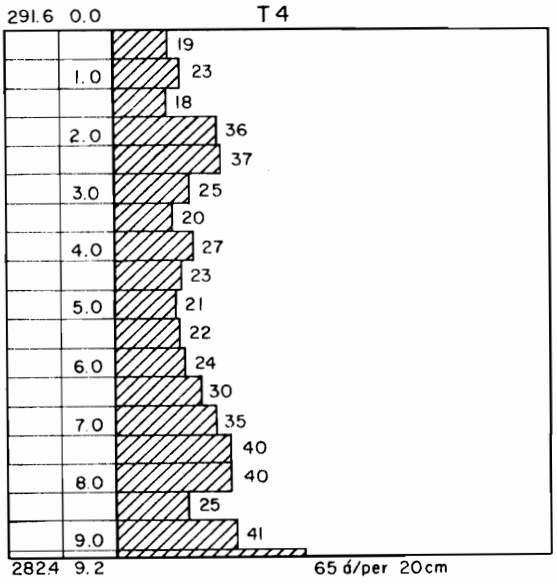


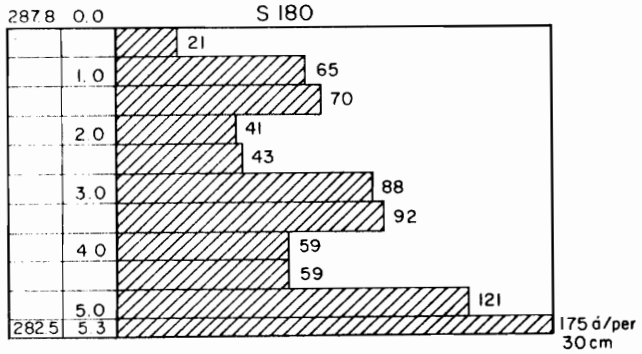


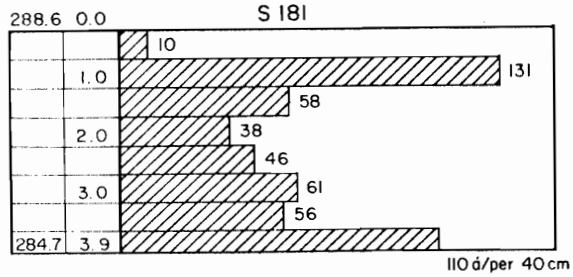


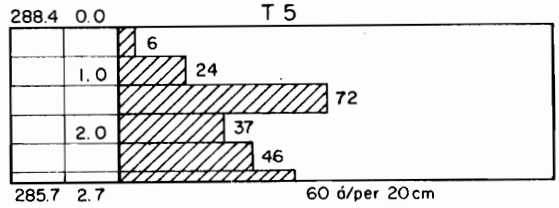








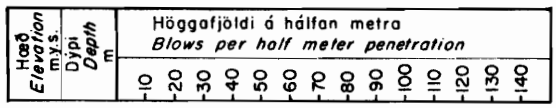


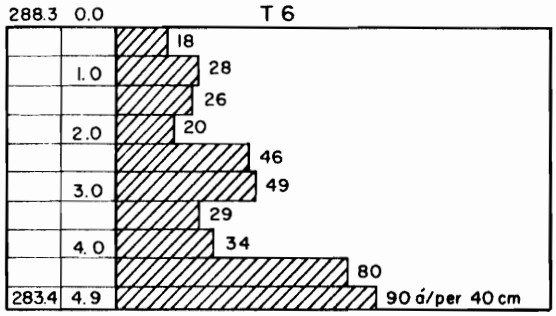


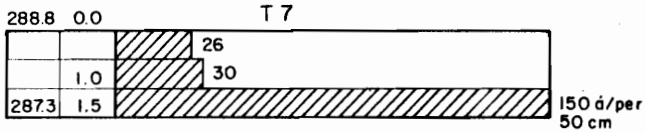
Skýringar á blaði I

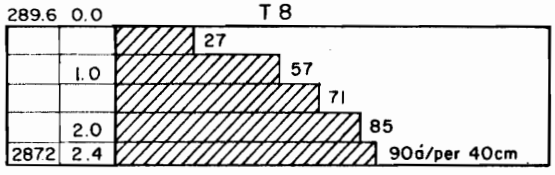
Explanation on sheet I

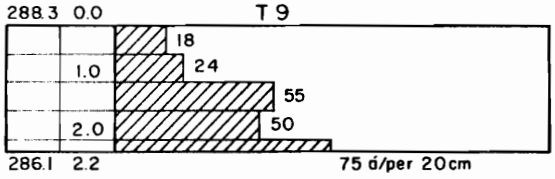
ORKUSTOFNUN		
Borró-borholur við Sultartanga		
27.5.'69 P.I./I.S.	Tnr. 47 Tnr. 770	Fnr. 8869
Blað 21 af 22	Borró-b B-277	

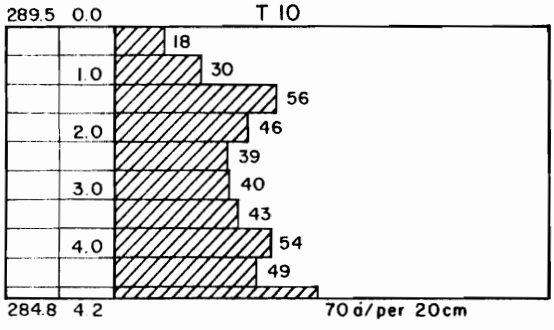








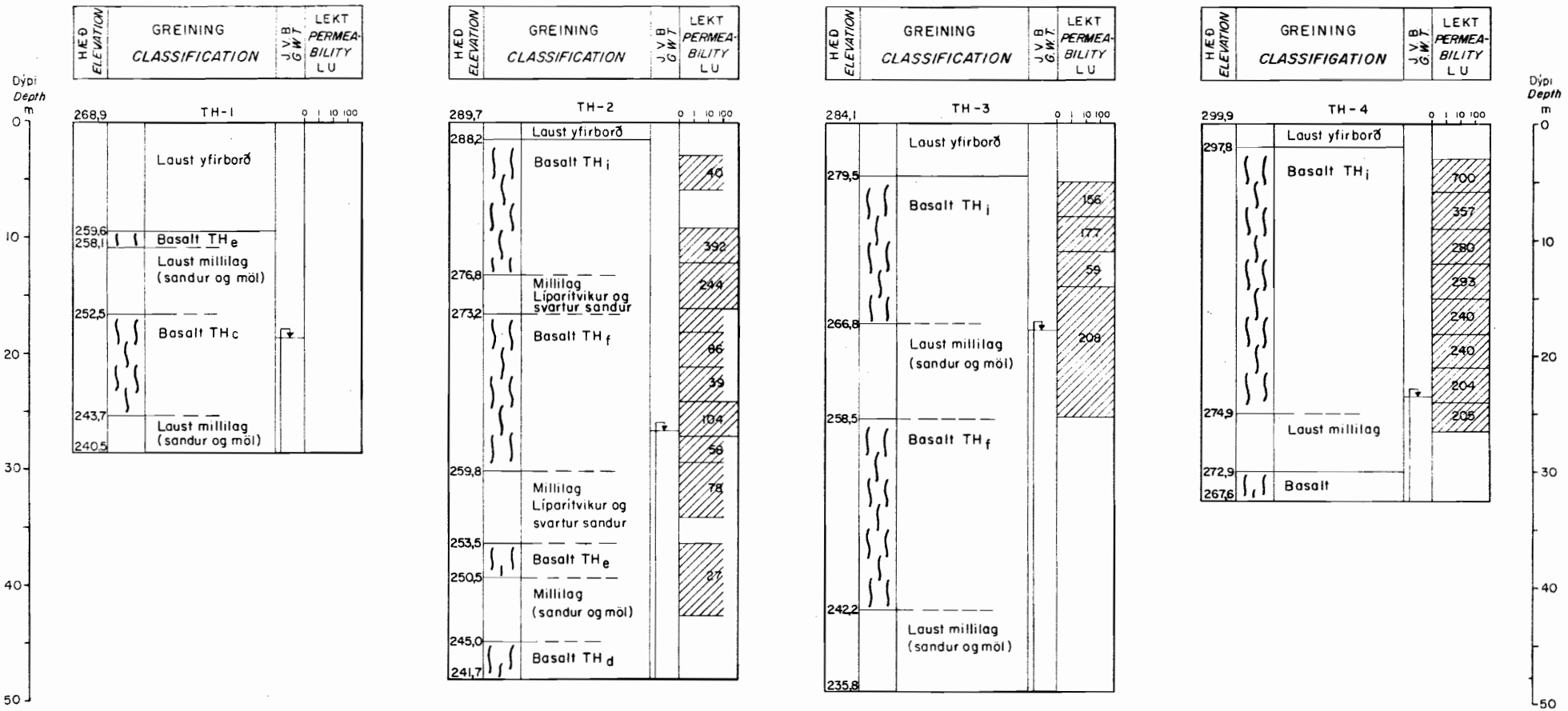




Skýringar á blaði I

Explanation on sheet I

ORKUSTOFNUN		
Borró-borholur við Sultartanga		
28.5.'69 P.I./I.S.	Tnr. 48 Tnr. 771	Fnr. 8870
Blað 22 af 22	Borró-b B-277	



ORKUSTOFNUN

Sultartangasvæði

Snið af borholum TH-1 – TH-4

20.6.67 EGW/IS | Tnr 612 | B-277 | Fnr. 7801