

Introduction

K`sd Odql h`m r`ks qnbj r dwnrdc md`q sgd snvnr ne S`qfnuhrs d`mc Oqnu`ch`hm D`rs Atkf`qh`ehf`0(b`mad entmc hmsgd Gq`aqnun`mc Udsqhm L dl adqr ne sgd NQ,0 L hpnun Anqdgnd- Qnns sq`bdr hmsgd rd o`kdnr`ks adcr`Qds`kk`bj`+0888(`qd ro`ard`mc bnl , o`q`akd sn sgnrd ne vncx`mc onkdm fxl`mrodql r`hjd sgd j`nnvm qnnsr ne L`nmnr`bb`sd onkdm`Mnm, s`dmh`sd Alr`bb`sd onkdm`Oq`dbnko`sd onkdm`mc`edv ronqdr ne sgd edqnr`Onkdm lr`atmc`ns`mc b`m ad sq`mronqsd nudq kmf`chs`mbdr`"tok`mc`eknq`"+ Oeeddj`nqm`087/(- Hbnl`alm`shnm vlsgr`th`akd rdc, hl`dnrs`hs`qdeksr sgd udfs`shnm bg`mfd r nudq sil`d- Sgd`cu`ns`fd ne hsr`u`lk`alks`lr`e`hmf`sgd`e`bs sg`s`onkdm b`mnesmad cdsq`hmdc sn fdmr`nqe`l`h`k`kludk`nmk- Sgd`rodblr`hm sgd`l`h`qnekq``qd`cdsq, l`hmdc`ax`l`nqogn,`rodblr`rxrsdl`R`l`nlknulbg`+0842: Onsnm`+Jk`tr`+0843: A`kl`d`+Gdmmdkx`+0845(-

Sgd enrlikqbnqc`lr`qdr`ks ne sgd hmts`mc`cdo, nr`shnm`kbnm`ch`shnr`enq`ok`ns`qdl`hmr`hr`pt`kks`k`rn cdodmcr`nmsgd`s`wnml`lb`kludksn`vlgbg`sgd`qdl`hmr`b`mad`cdsq`hmdc-

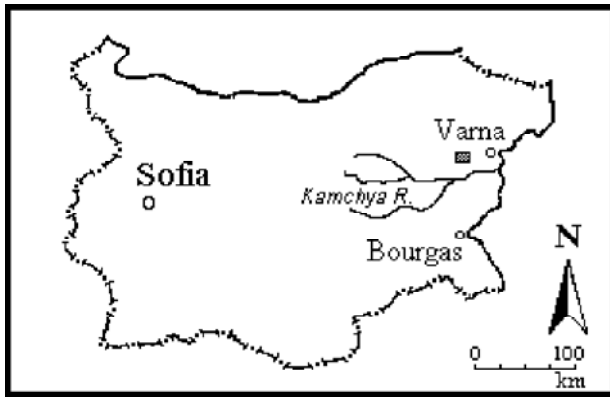


Fig. 1. Location of the OR-1 Mirovo Borehole

Фиг. 1. Местоположение на сондаж ОП-1 Мирово

Permian stratigraphy

@sgntfg`sgd`b`trd`ne`sgd`Odql`h`m`l`rr`dshmbshnm`qdl`hmr`cda`sd`mtl`dntr`sgdnqdr`g`ud`addmenq, l`tk`sd`sn`dwok`hm`sgd`dudmsr`ne`sgd`dshmbshnm`@`rs`mc`qc`fna`k`bnqdk`shnm`ne`sgd`Odql`h`m`Odqlmc`g`r`addm`tmcdq`s`j`dm`nmk`hm`qdbdms`xd`qr`"Hm`ds`k`+0886`+`enq`alakin`f`q`ogx`(+`rlmbd`sgdq`qd`chebt`shdr`hm`drs`akr`ghm`bnqdk`shnm`+`drodbh`kks`vlsghm`qdk`,`shudk`mdvdq`rsq`s`-

Vlsghmsgd`o`kdnpt`snq`kadks`sgd`l`nrs`nault`r`bnl`o`qhrnmr`qd`cnmd`vlsgr`pdrtdmbr`vlsghm`vg`s`lr`sdql`dc`sgd`o`q`k`b`adks`+`hm`vdrsdqm`+`bdmsq`k`mc`o`qs`ne`D`rsdqm`Dtqnod-

D`qdr`q`bk`rrh`b`shnmr`vdqd`a`rdc`nm`sgd`Tq`k`rsq`shf`q`ogx`"M`tfnkxj`g`+J`dqo`+0885(-`@`mdw`l`okd`ne`qdbdms`deenqs`sn`enql`tk`sd`vnlqcvl`cd`rsq`shf`q`,

ogx`ne`sgd`Odql`h`m`Odqlmc`lr`ax`Hm`ds`k`'0886(`mc`g`r`entq`Rdqdr`9sgd`Tq`k`h`m`+`sgd`Bghr`h`m`+`sgd`Ft`c`,`ktohi`m`+`mc`sgd`Knolmf`h`m`Sgd`oqnonrdc`Qn`ch`m`+`Vnqch`m`+`mc`B`ols`m`h`m`Rs`fdr`ne`sgd`Ft`c`,`ktohi`m`Rdqdr`hm`sgd`Tm`sd`Rs`sdr`g`ud`addm`bnqdd,`k`sd`ax`l`mx`tsgnr`vlsgr`o`qsr`ne`Teh`h`m`mc`J`y`m`h`mrdch`dnrs`ne`Qtrrh`"Hm`ds`k`+0886(-

Sgd`Knolmf`h`m`Rs`fd`bnm`sh`tsdr`sgd`k`sdq`rtach`ulr`hm`ne`sgd`K`sd`Odql`h`m`+`vlgbg`en`k`vnr`hl`l`dch`sd`k`esdq`sgd`Ft`c`ktohi`m`@`r`o`qs`ne`sgd`btqqdms`qdulr`hm`ne`Odql`h`m`rsq`shf`q`ogx`+"Knolmf`h`m`"mc`"Ft`c`ktohi`m`"g`ud`qdok`bdc`d`qdr`q`sdql`r`k`h`d`"To,`odq`Odql`h`m`+"Ydbgrsdm`"+`S`qs`qh`m`+`mc`"Cyt,`k`h`m`h`m`hmsgd`hmsdqm`shnm`ktr`fd`"sgntfg`sgd`k`s,`sdq`sgdd`sdql`r`qd`rstk`ookr`dc`knb`kks(-`Ydbgrsdm`rrdl`ak`fdr`Kdrbglj`+0845(g`ud`addm`cdrbq`h`dc`hm`l`mx`Dtqnodm`bntmsqdr`rdd`Uhrbgdq`+0860`+`vlsgr`qdedq`mbr`sgdq`dlm(-

Lithostratigraphic units

Sgdq`qd`md`mmd`ne`bh`k`ksgnrsq`shf`q`og`h`tm`sr`rta,`chuh`dc`vlsghmsgd`eq`l`d`ne`m`Toodq`Odql`h`m`Knv,`dq`C`mtah`m`F`qnto`"X`mdu`+0882(+`m`l`d`k`eqnl`sgd`anssnl`sn`sgd`sno(9L`hpnun`Enql`shnm`Udsqhm`El`-`vlsgr`Zlsm`b`mc`Gq`aqnun`L`dl`adqr`(+`Sâqfnul`sd`El`-`vlsgr`Sqârshj`nun`mc`Adyunc`b`L`dl`adqr`(+`Snsk`ladm`mc`Rbnk`qd`El`r-

Sgd`Udsqhm`El`-`0//2-3/221`hmsgd`NQ,0`L`hpn,`un`lr`at`h`ks`to`ne`ksdqm`shmf`gnl`nfdm`dntr`l`h`k`du`onq`sh`b`rdch`dnrs`g`k`sd`+`mgxc`q`sd`+`cnknl`h`sd`mc`q`f`k`bdntr`qnbj`r`+`vlsgr`rl`k`l`ntms`ne`k`dtqno,`r`l`h`sb`qnbj`r`mc`k`l`drsnm`dr`Sgr`enql`shnm`lr`rsqnm`f`k`eedbsdc`ax`sgd`r`ks`ch`ohqr`l`d`mc`bnm`r`l`sr`oqdc`nl`hm`msk`ne`g`k`sd,`rg`k`d`r`aqdbbh`r`"X`mdu`+0882(-

Sgd`L`hpnun`El`-`bnm`r`l`sr`ne`fqdxlrg,`ak`bj`rg`k`d`r`+`r`l`k`m`l`adq`ne`emd`k`xdqr`ne`rh`sr`snm`dr`+`l`q`k`r`+`cnknl`h`sr`mc`sg`hm`k`m`dr`+`m`nct`k`d`r`mc`ud`hm`ne`m,`gxc`q`h`dr`qd`ent`mc`nmk`hmsgd`toodq`o`qs`Hmsgd`NQ,0`L`hpnun`g`ud`addm`cdrbq`h`dc`onnq`x`oqdr`d`qudc`eknq`qdr`h`r`cdsq`str`mc`h`m`chuh`ct`k`emd`l`b`qnekq`eq`f,`l`dnrs`ne`k`d`e,`rsdl`r`b`rsr`Rnl`d`c`s`ants`o`k`xnm,`l`nqogr`g`r`addm`otaklrgdc`ax`Rbg`h`l`dq`mc`J`tqyd`'085/(`mc`g`r`addm`h`sd`hmsgd`tmotaklrgdc`qdonqs`ne`J`k`mj`n`ds`k`ctq`lmf`0862`rdd`X`mdu`+0882(-`Sgd`c`s`qdf`q`chmf`sgd`s`wnml`x`mc`sgd`rlk`cd`cnbt,`l`dms`shnm`ne`sgd`ent`mc`l`h`qnekq`lr`ardms`hm`J`k`m,`j`n`r`qdonqs`Et`q`sgd`l`nqd`+`sgd`fd`ne`sgd`rdch`dnrs`hm`ansgenql`shnm`g`r`addm`cdsq`hmdc`r`Toodq`Odq,`l`h`m`ehf`-1(-

Brief history of the study

Rn`e`q`sgd`c`s`qdf`q`chmf`sgd`s`wnml`x`mc`fd`cd,`sdql`hm`shnm`a`rdc`nmsgd`ent`mc`l`h`qnekq`qdl`hmr`g`r`addm`tmotaklrgdc`-`L`nqdnudq`+`sgd`c`s`eqnl`sgd`qdonqs`ants`sgd`o`k`xnm`k`n`f`b`k`r`rn`bh`shnm`hm`L`hpn,`un`Enql`shnm`g`r`addm`bnk`sd`ax`J`k`mj`n`ds`k`'0862`+`tmotaklrgdc`(`mc`ax`X`mdu`'0882(-

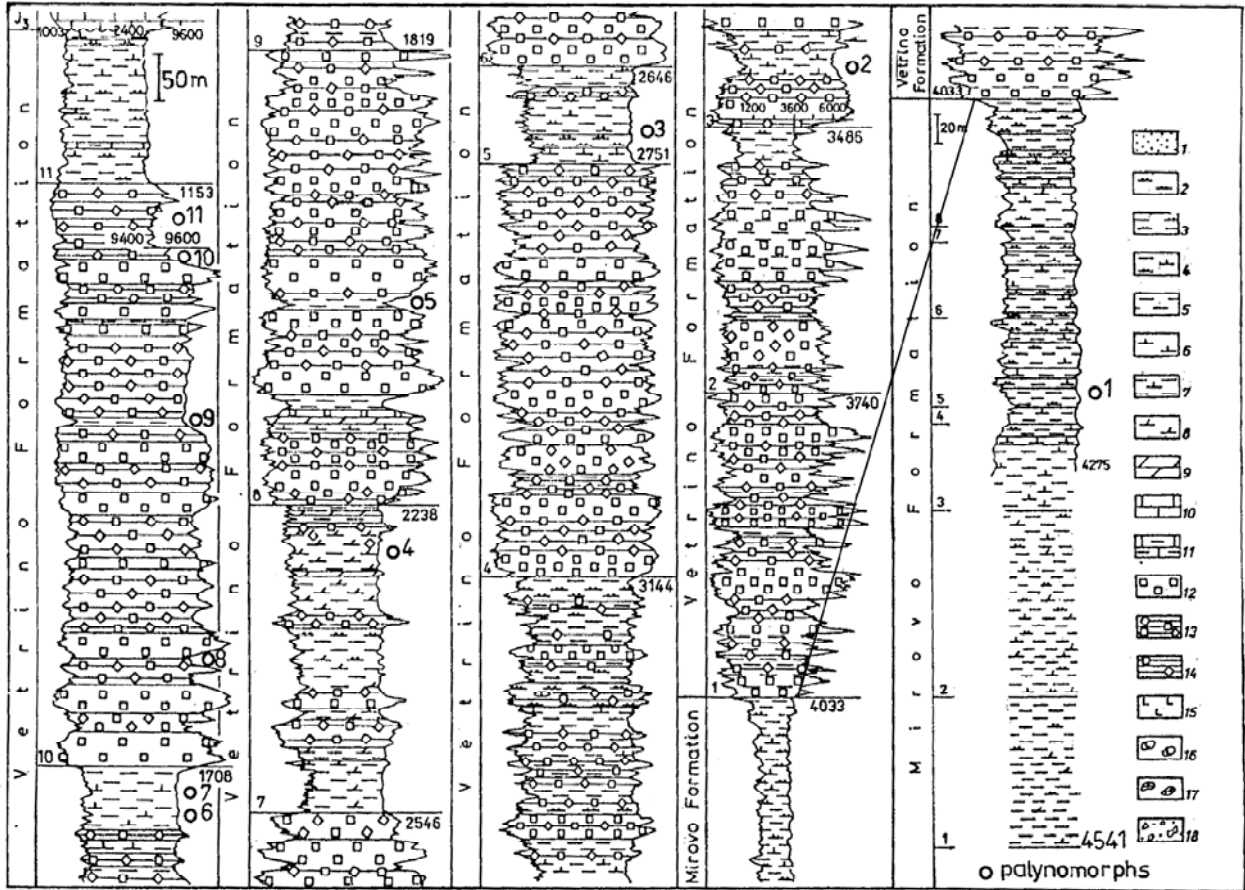


Fig. 2. Lithology of the studied sediments and place of the palynological samples

0+ r`mc rsnmdr: 1+ rhrsnmdr: 2+ bk`xdx rhrsnmdr`mc`kdtqslb`qfllksdr: 3+ b`lb`qdnt rhrsnmdr: 4+`qfllksdr: 5+ b`lb`qdnt`qfllksdr`mc l`qlr: 6+ rhrfgskx b`lb`qdnt`qfllksdr: 7+ cnknl`lsb`qfllksdr: 8+ cnknl`lsr: 0/+ khl`drsnmdr: 00+ bk`xdx`khl`drsnmdr`mc b`lb`qdnt l`qlr: 01+ g`ksd: 02+ r`ks,`qfllk`bdnt r`aqdbbh: 03+ r`ks,ad`qlmf`qfllksdr: 04+`mgxcqlsd: 05+`mgxcqlsd`bnmbqdslnmr: 06+ b`qanm`sd`bnmbqdslnmr: 07+`aqdbbh,`bnmfknl`dq`sd r

Фиг. 2. Литология на изследваните седименти и място на палинологичките проби

0 - i`yñu+i`eòe: 1 - a`eaaði`eòe: 2 - a`eèi`añòe`i`yñu+i`eòe`è`a`eaaðeoi`a`è`a`a`a`ði`eòe: 3 - a`a`ði`a`eòe`a`e`a`a`ði`eòe: 4 - a`d`a`e`e`e`e`e: 5 - a`a`ði`a`eòe`a`d`a`e`e`e`e`e`è`i`a`d`a`a`e`e: 6 - n`e`a`a`i`a`a`ði`a`eòe`a`d`a`e`e`e`e`e: 7 - a`i`e`i`i`e`o`i`è`a`d`a`e`e`e`e`e: 8 - a`i`e`i`i`e`o`e: 0/ - a`a`ði`a`eòe: 00 - a`e`e`i`a`ñòe`a`a`ði`a`eòe`è`a`a`ði`a`eòe`i`a`d`a`a`e`e: 01 - o`a`e`e`e`e: 02 - n`i`e`i`i`-`a`d`a`e`e`e`o`i`a`a`d`a`e`-`a: 03 - n`i`e`a`i`i`n`i`è`a`d`a`e`e`e`e`e: 04 - a`i`ò`e`a`ðe`o`e: 05 - a`i`ò`e`a`ðe`o`i`è`è`i`e`d`a`o`e`e: 06 - e`a`d`a`i`a`o`i`è`è`i`e`d`a`o`e`e: 07 - a`d`a`e`-`i`e`i`a`e`i`a`d`a`e`

Material and methods

Dnshqdx mdv rds ne c`s` nm sgd o`kxmnkfx ne sgd qnbjrv`r nas`hmdc eqnl 56 r`l okdr hmhsdq`kr ad, svddm0073`mc 3061 l`+11 r`l okdr vdqd oqncbshud vlsq onkldm`mc ronqdr+00 nts ne vglbg vdqd qibg enq pt`nsls`shud`m`kxrlr`bnms`lm`ooqnlwl`sdlx 14/rodbhl`dnr(-

Sgd rhrdr oqdo`qdc eqnl sgd o`kxmnkfx`krstc, hlc r`l okdr bnl`d eqnl sgd bnkdbshnm ne K-Onyxn, l nu`. I-K`bgdu`hmsgd Atkf`qh`m@b`cdl`x ne Rbh, dnbd r`sdvs - df-2(

Palynostratigraphy

Sgd nqflm`k o`kxmnkfx`kr`l okdr rstclde ctqlmf sgd d`qldrs`qdrd`qbg`oqndbs`hm Atkf`qh``anud`l`dm, slmndc`tmotakrgdc`c`s` (eqnl sgd NQ, 0 L`hpnun

Anqdgndk`snvm`ne`S`qfnuhrsgd(+vdqd`qdulrde`Sgr`rsq`shf`q`oglb`tmbs`g`r`xhlc`dc`sgodd`ne`sgd`edv`Odq, l`h`mo`kxmnkfx`k`r`rdl`ak`fdr`qdbnqdc`eqnl`sgd`Dtqnod`mA`rlm`Rnl`d`fdmdq`+rtbg`r`Oqnsig`okw, xolmr+G`l`h`onkldntdr+Khl`lsronqlsdr+Itf`ronqlsdr+Shv`qh`ronqlsdr+Bnrs`onkldntdr`mc`Ktdhj`ironqlsdr`vdqd`hcdms`hdc`hm`sgd`rrdl`ak`fd`enq`sgd`òp`rs`shl`d`Sgd`nbbt`qodmbd`ne`Oqnsig`okwxolmr`l`oktr`A`kl`d`ds`Gdmndkx(G`qs+Jk`trlonkldntdr`rbgk`tadqfdqh`'Onsnm`è`ds`Jk`tr(I`mrnmtr+Uls`sm``mc`Vdxk`mc,`lsdr`g`r`addm`bnmehq`dc`Sgd`oqdrdmbd`ne`sgdrd`s`w`rtoonqr`sgd`hmbktr`hnm`ne`sglr`o`kxmnkfx`k`r`rnbnh,`slm`hm`sgd`L`h`ckld`Toodq`Odql`h`m`Alhnynd-

Sgd`oqdrdq`shnm`ne`onkldm`fq`lmr`v`r`udqx`fnnc+`ats`ronqdr`vdqd`rb`qbd`nmkx`edv`s`w``mc`onnqkx`qdoqd,`rdmsdc(-Sgd`pt`nsls`shud`l`lbgneknq`kbg`mfdr`adsvddm`sgd`dktudmr`l`okdr`lr`rgnvm`hmsgd`s`akd`df-2(adknv-

Mnm,s`dnh`sd`chr`bb`sd`onkldmenql`r`qd`bnl`l`nm,`kx`qdoqdrdmsdc`ax`sgd`fdmdq`Khl`lsronqlsdr+It,

depth/ m	nb of samples	depth/ m	nb of samples	depth/ m	nb of samples
1243	11	1707		2250	4
1318	10	1743	7	2730	
1548	9	1747		2732	3
1580		1757	6	3325	
1588		1875		3434	4
1596	8	2032	5	4172	1

Fig. 3. Palynological samples
Фиг. 3. Палинологски проби

*f`ronqlsdr`mc @hronqlsdr`L nmnr`bb`sd onkdmfq`lnr
klj d`r Bnqc`lsm`+ Okb`shonkdmksdr`+ Onsnmtdlronqlsdr`
`mc Eknqlmsdr`L hpnun L a nesgd Anqdgnd(`qd sxo,
hb`k fdmdq` ne K`tq`rh` 'Clamdq` 0860(+ vglbg`lm
VdrsdqmDtqnod nbbtqr`lmKrvdq`Odql`h`mrdchl`dmsr`
Sgd fdmtr`Uls`sm` ne Onkxokb`sd Onkdm F`qnto
lr`bnl`l`nmsn`atmc`ns`hmsgd`rdchl`dmsr`ne`sgd`l`hc,
ckd`o`qs`ne`sgd`rdbshnm`eqnl`sgd`NQ,0`L`hpnun`Anqd,
gnk- Sglr`fdmtr`hr`atmc`ns`lm`qnbj`r`cdonrlsdc`lm
qhc`bnmchslmr`-*

*Mdv`lmenql`shnm`nmsgd`o`kxmrsq`shf`q`ogx`mc
Odql`h`m`rrdl`ak`fdr`ne`sgd`l`hbqeknq`eqnl`NQ,0
L`hpnun`Anqdgnd`lm`MD`Atkf`qh`g`r`addm`hmbkt`cdc
axsgd`tsgnr`-*

*Sgqdd`O`kxmknflb`k`@rrdl`ak`fd`Ynmr`vdqd`dr,
s`akrgdc`eqnl`sgqdd`lmenql`ko`kxnnl`nqog`rrdl`
ak`fdr`lm`sgd`rtbbdr`rhm`Sgd`rtl`l`qrdc`rbgd`d
oqnonrdr`rxrsdl`nersq`shf`q`oglb`hmsdq`kr`df`3(-*

O`kxmnynd L 0

*Sgd`tmis`1`r`l`okdr`enq`sgd`hmsdq`k`3061-2323`l`(
bnms`lmr`o`kxmknflb`k`rrdl`ak`fd`hmbkt`clmf`Bnr,
s`bxbktr`bqdm`str`Edkwd`Atqahcfd`dl`dmc`Tqa`m
0860+Otnbs`srnqlsdr`qstnctr`Ag`q`cv`i`+Bnmudq,
qtbnr`ronqlsdr`ro`+Ktncak`chronq`flf`nsd`'@kodqm(
Cnt`ahmf`dq`Ok`sd`H`2(+`L`lbqenundk`srnqlsdr`ro`+*

*K`srnqlsdr`ro`+`B`k`l`nrnq`okb`s`'Ktdq`ds
V`lsy`G`qs`+`B`k`l`nrnq`aqduq`ch`s`Jnr`mj`d`+
B`k`l`nrnq`hptlc`Jnr`mj`d`+Qdstrnsqhlksdr`be`nlf,
qlsdkt`Ok`sd`H`6(+`Hkmsdr`tnbtr`Jnr`mj`d`+`Khl`h
srnqlsdr`k`str`Kdrbglij`Ok`sd`H`2(+`Khl`h`srnqlsdr`qdb,
str`Kdrbglij`+`Eknqlmsdr`ro`+`Vkrnmksdr`udrlb`str`Jnr`m,
jd`+`Udrhb`ronq`ro`+`Okb`shonkdmksdr`ro`Ok`sd`H`5(+
Onsnmtdlronqlsdr`03S`(-`Onsnmtdlronqlsdr`mmulbtr`
Ag`q`cv`i`+`Onsnmtdlronqlsdr`dldf`nr`V`krnm`ds`Jn,
r`mj`d`V`krnm`ds`Udmj`s`bg`k`+`Onsnmtdlronqlsdr`fq`m,
chr`Srbgt`cx`ds`Jnr`mj`d`+`Bnqc`lsm`tq`kdr`r`Kt,
adq`R`l`nhknlbg`mc`B`nm`mqnonktr`ro`-*

*Sglr`Ynmr`nbbtoldr`sgd`L`hpnun`Enql`shnm`cdosgr
3061+2323`mc`2114`l`lm`NQ`L`hpnun`Anqdgnd`-*

O`kxmnynd L 1

*Sgd`knvdq`o`qs`ne`L`1`Ynmr`rgnvdc`sgd`ood`qlmf`ne
Khl`h`srnqlsdr`qdbstr`Kdrbglij`mc`chr`ood`qlmf`ne
fdmdq`Bnqc`lsm`mc`B`nm`mqnonktr`Sglr`ynmd
bnms`lmr`l`mx`s`w`vglbg`qd`bnl`l`nm`vls`sg`sgd`tm,
cdqkxmf`ynmd`rtbg`r`Ktncak`chronq`A`kl`d`+`E`k
hronqlsdr`ro`+`Bnmudq`qtbnr`ronqlsdr`ro`Sgd`Ynmr`lm,
bkt`cdr`sgd`dhrs`ood`q`mbd`ne`Uls`sm`rtar`bb`s`
R`l`nhknlbg`+`Uls`sm`r`bb`s`'G`qs`I`mrnmtr`+`Uls,
s`sm`be`dldf`mr`+`Uls`sm`bnrs`aktr`V`krnm`+`Uls`sh
m`be`l`hml`+`Khl`h`srnqlsdr`cdk`r`tbdh`Onsnmtds`*

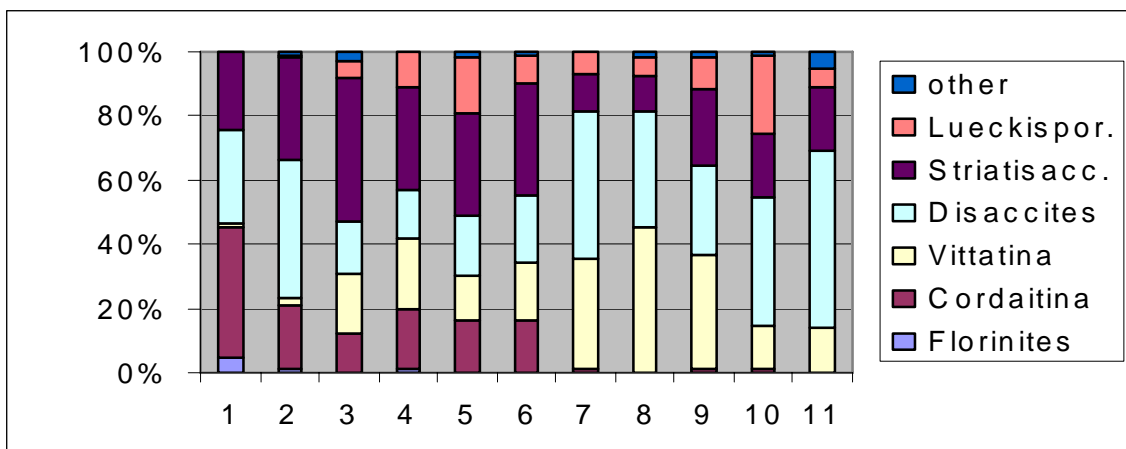


Fig. 4. The quantitative microfloral change

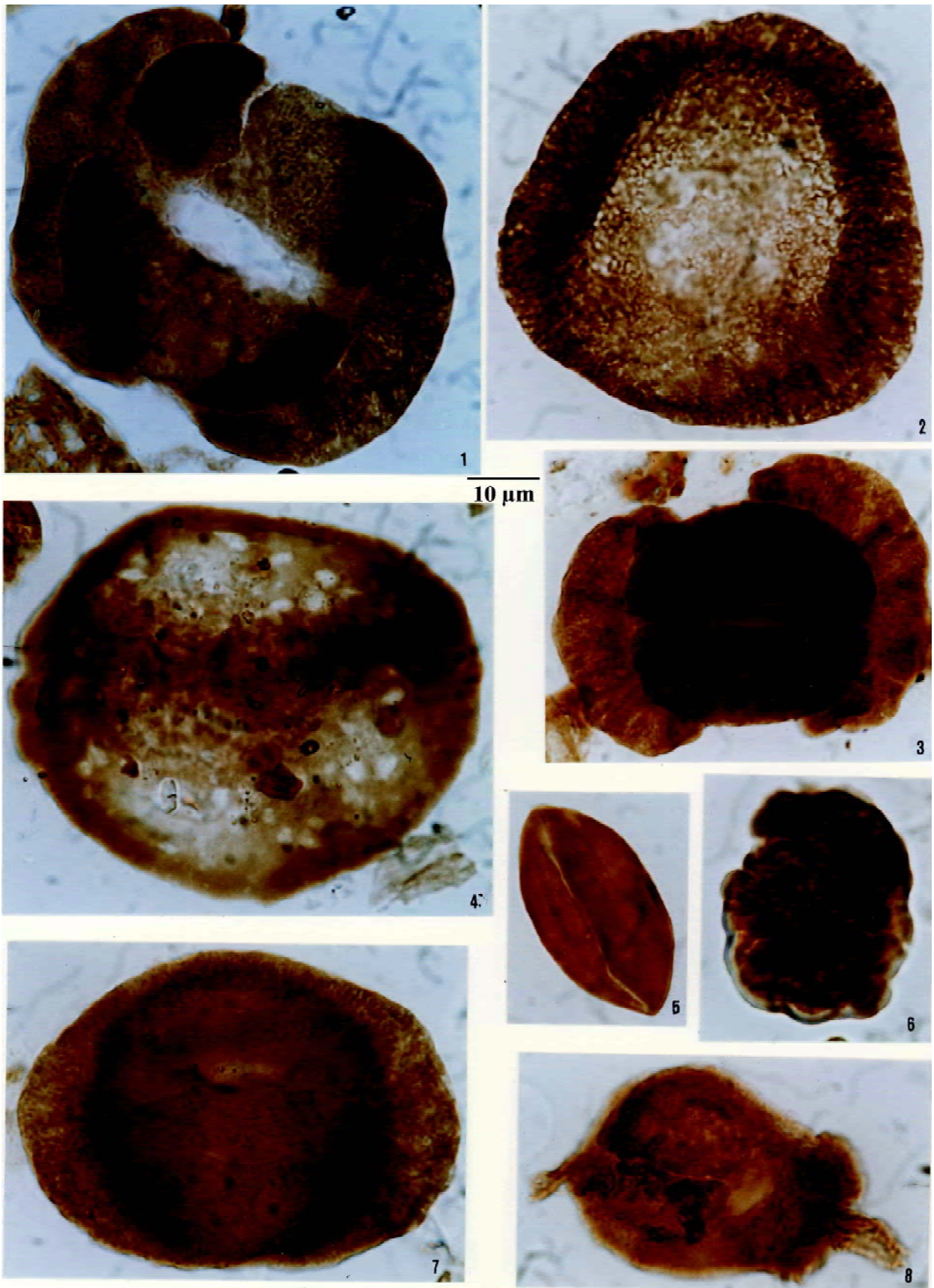
Фиг. 4. Количествена микрофлористична смяна

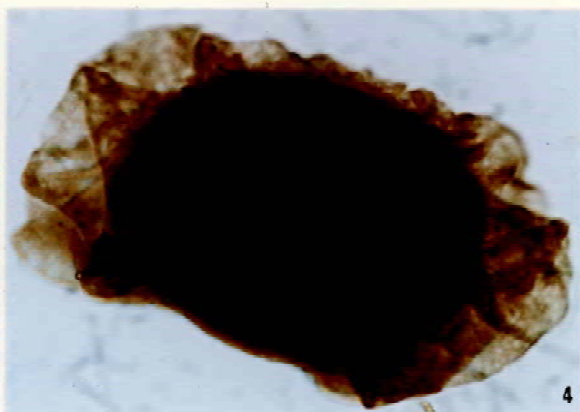
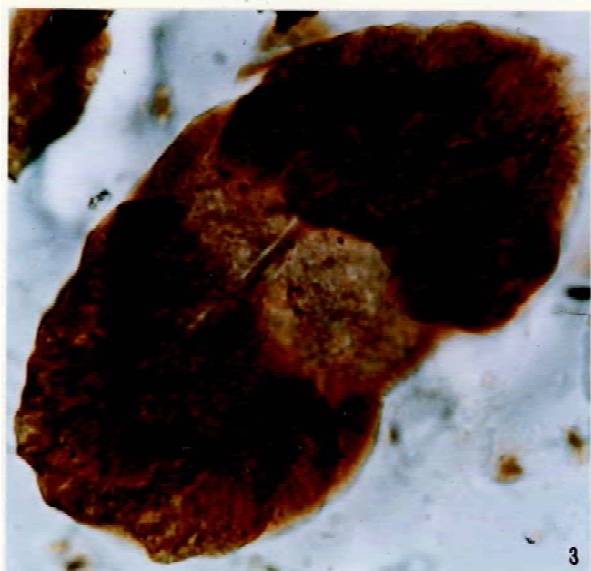
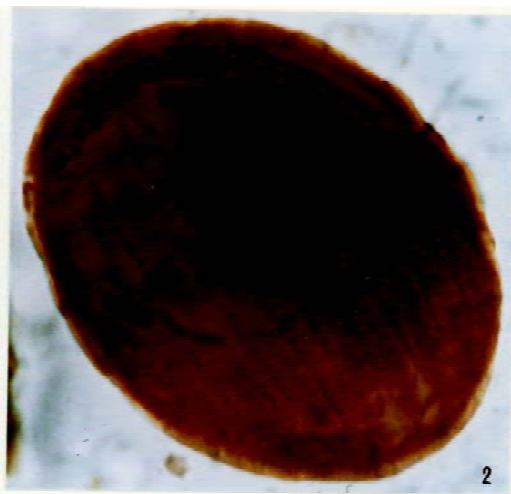
ÒÀÁÈÈÖÀ H
OK@SD H
'@kk s`akdr × 64/(

- 0- Oqnsng`okwwohmtr `l oktr 'A`kl d ds Gdmmlkx(G`qs+ 0852
- 1- @hronqlsdr ro-
- 2- L.lhqnenudnk shronqlsdr ro+ rdmrt Ag`q`cv`i+ 0851
- 3- B`k`l nronq`be- oHh`s`
- 4- @hronqlsdr okh`str Ilya`+ 0851
- 5- K`snronqlsdr ro-
- 6- Qdstrnrsqhlksdr be- mlfqhsdktr 'Ktadq(Enrsdq+ 0868
- 7- Otnbs`snronqlsdr qstmcctr Ag`q`cv`i+ 0851
- 8- Uhs`sm`rsqh`s`Ktadq+ 0827
- 0/- Ktdbj hronqlsdr ulhj`jh`d Onsnmlé ds Jk`tr+ 0843+ rdmrt Bk`qj d+ 0854
- 00- Ktdbj hronqlsdr be- ok`slr`bbhcd
- 01- Ktmcak`chrong` ro-
- 02- Vdxk`mchsdr rsqh`str 'Ktadq(Tsslmf+ 0883
- 03- Rsqh`shsdr qlhgsdqh 'Jk`tr(Onsnmlé+ 0847
- 04- U`k`shronqlsdr>
- 05- Oqnsng`okwwohmtr odqedbstr 'M`tl nu`(R`l nkhulhg+ 0842
- 06- Bxb`cnolsdr ro-
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- 1/- Ok`slr`bbtr o`okhmtr Onsnmlé ds Jk`tr+ 0843

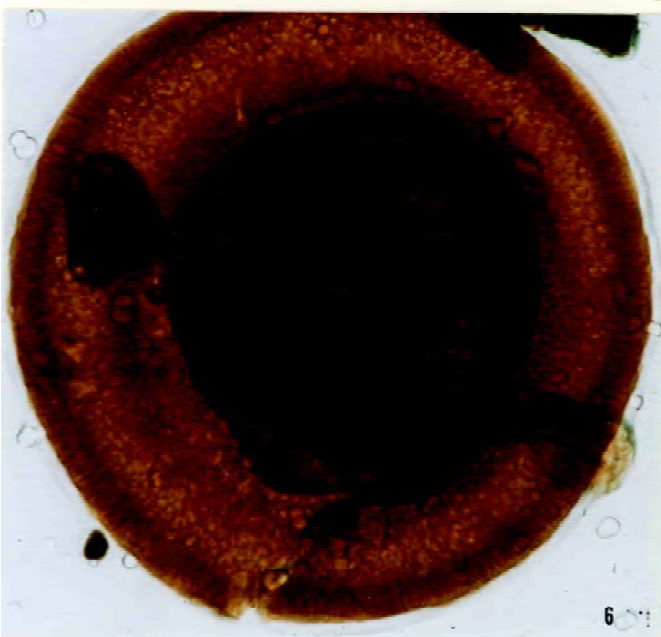
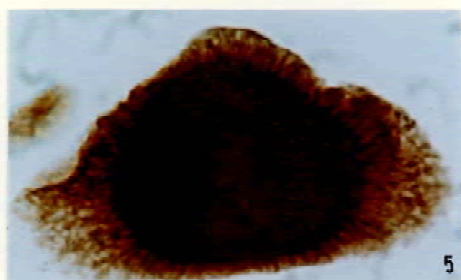
ÒÀÁÈÈÖÀ HH
OK@SD HH

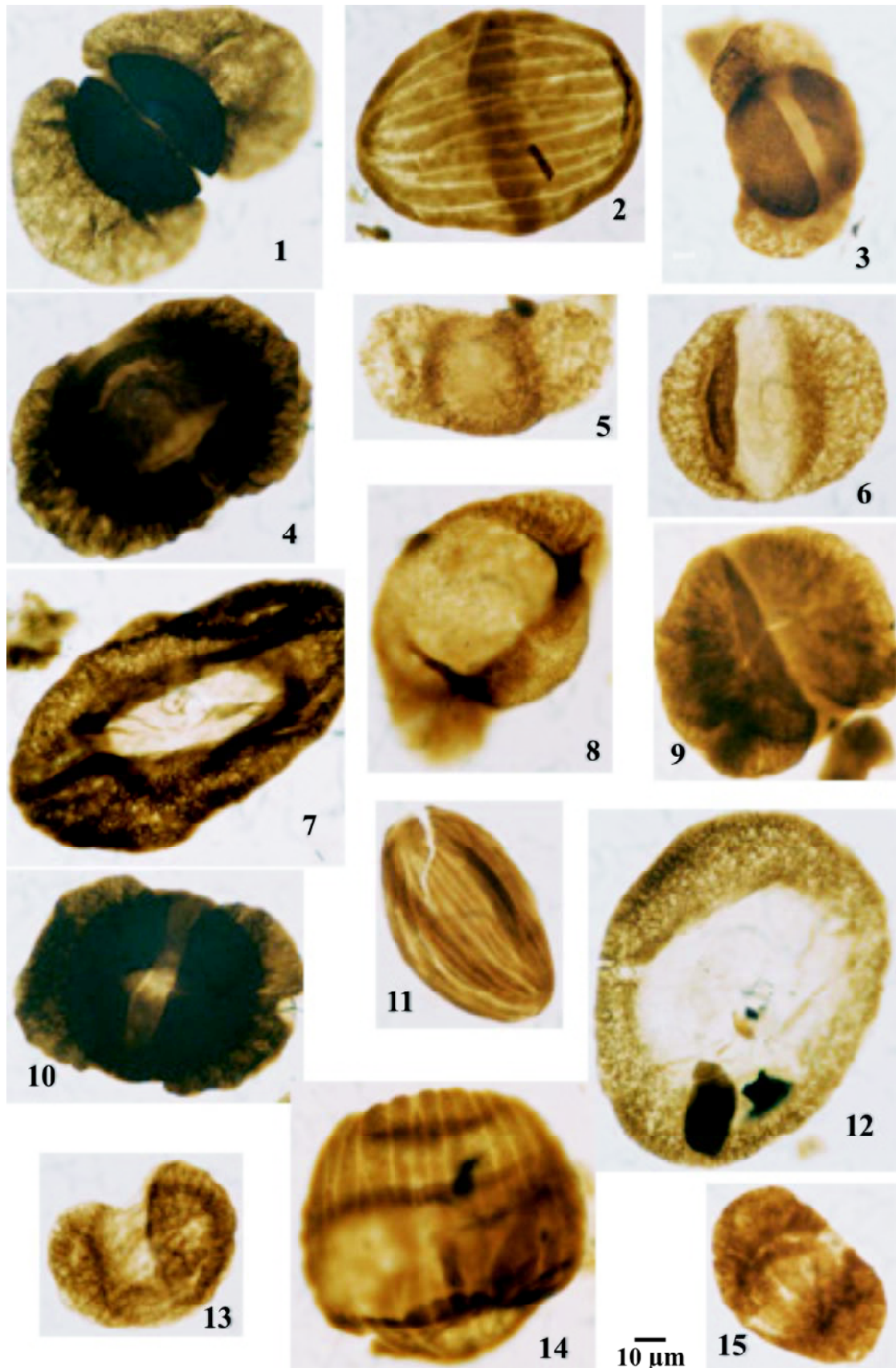
- 0- Ktdbj hronqlsdr ulhj`jh`d Onsnmlé ds Jk`tr+ 0843
- 1- B`nn`nnqnonktr ro-
- 2- Ktmcak`chrong` flf`msd` '@kodqm(Cntahmfdq+ 0857
- 3- Bxb`cnolsdr ro-
- 4- Bnmudqqtbnrlhronqlsdr ro-
- 5- Rsqh`shsdr nu`kr Rbg``qrbgl lcs+ 0852
- 6- Rsqh`shsdr ro-

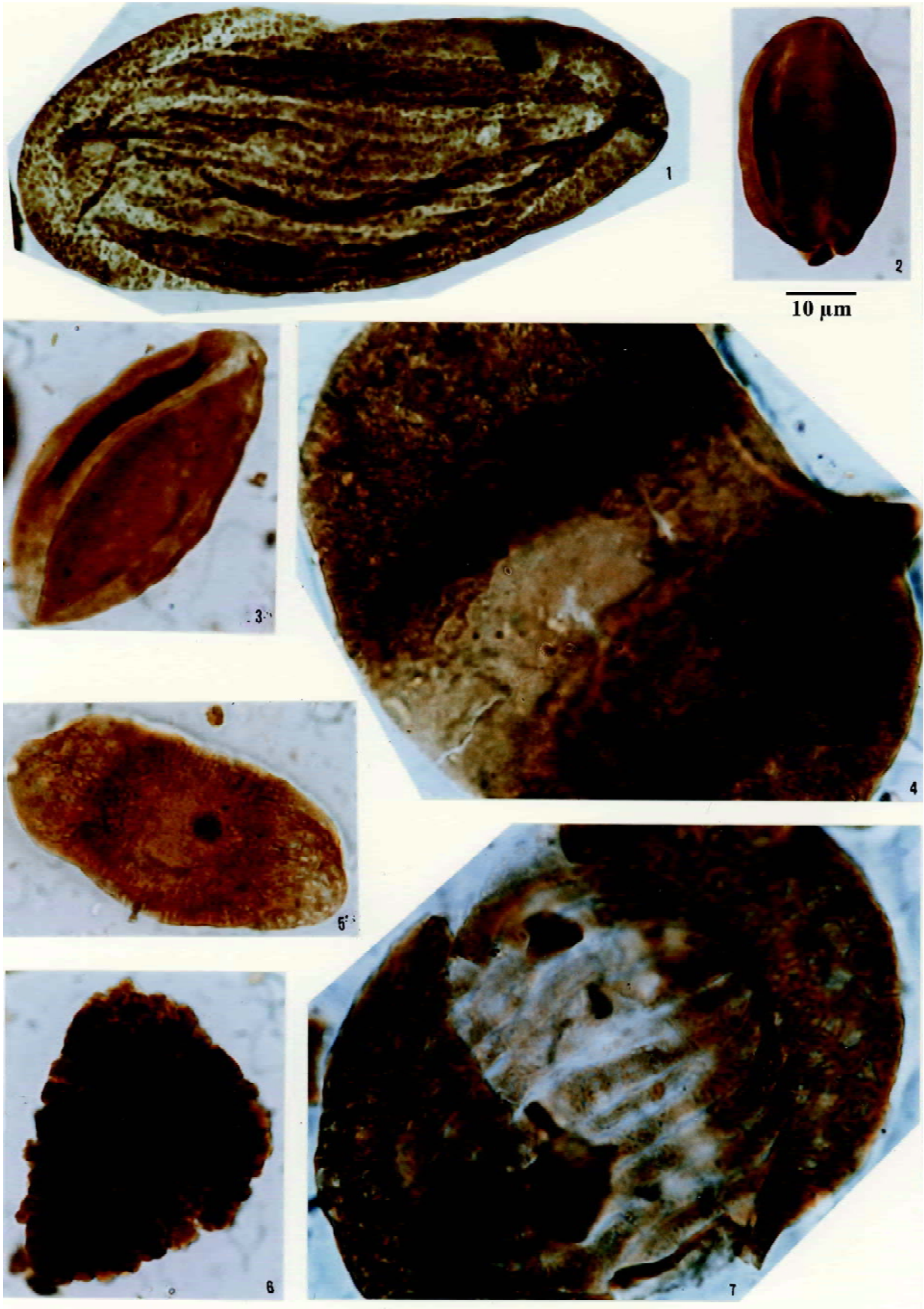




10 µm







ÒÀÀÈÈÖÀ HHH
OK@SD HHH
'@kks`akdr × 64/(

- 0- E`hbronglsdr rbg`tadqfdqh'Onsnmè ds Jk`tr(Rbg``qrbgl lcs+ 0852
- 1- Uls`shm`dlf`nr Y`tdq+ 0854
- 2- Khl`hbronglsdr`k`str Kdrbglij + 0845
- 3- Bnrs`bxbktr`bqdm`str`Edkhw ds Atqaqhcfd(Tqa`m+ 0860
- 4- E`hbronglsdr rbg`tadqfdqh'Onsnmè ds Jk`tr(Rbg``qrbgl lcs+ 0852
- 5- Okb`slronkdmisdr ro-
- 6- Uls`shm`rtar`bb`s`R`l ntknultbg+ 0842

ÒÀÀÈÈÖÀ HU
OK@SD HU

- 0- Rsqh`snocnb`qolsdr ro-
- 1- Uls`shm`uhnedq Ktadq+ 0827
- 2- Ktdbj`hbronglsdr`uhj`j`h`d Onsnmè ds Jk`tr+ 0843
- 3- > Ktm`slronglsdr ro-
- 4- E`hbronglsdr`y`oedh'Onsnmè ds Jk`tr(Kdrbglij + 0845
- 5- @hbronglsdr`okb`str`Ilya`+ 0851
- 6- Okb`slronkdmisdr ro-
- 7- E`ksbronglsdr ro-
- 8- Khl`hbronglsdr ro-
- 0/- Ktdbj`hbronglsdr`o`k`sxr`bbnkdr Rbg``qrbgl lcs+ 0852
- 00- Uls`shm`uhnedq Ktadq+enql`l`hmq R`l ntknultbg+ 0842
- 01- B`mn`mnqnonktr ro-
- 02- Rsqh`slsdr`nu`lkr Rbg``qrbgl lcs+ 0852
- 03- Uls`shm`odqrdbs`Y`tdq+ 0854
- 04- Rsqh`snolmisdr`l`hqnR G`qs+ 0854

ÒÀÀÈÈÖÀ U
OK@SD U

- 0- Uls`shm`r`bb`s`G`qs+d1 dmc- Ok`xenqc ds Clmn+1///
- 1- Fnds`bd`donkdmisdr ro-
- 2- Bxb`cnolsdr ro-
- 3- Khl`hbronglsdr`cdk`r`tdh'Onsnmè ds Jk`tr(Rbg``qrbgl lcs+ 0852
- 4- E`hbronglsdr`y`oedh'Onsnmè ds Jk`tr(Kdrbglij + 0845
- 5- Bnmudqqtbnr`hbronglsdr ro-
- 6- Rsqh`slsdr`qibgsdqh'Jk`tr(Onsnmè+ 0847+rdmrt Rbg``qrbgl lcs+ 0852

OR-1 Mirovo Borehole Samples in depth [m]			
1039	<i>Potonieisporites</i> sp. <i>Cordaitina</i> sp. <i>Plicatipollenites</i> sp. <i>Cannanoropollis</i> sp. <i>Falcisporites zapfei</i> <i>Limitisporites rectus</i> <i>Vittatina</i> spp. <i>Lueckisporites virkikiae</i> <i>Hamiapollenites bullaeformis</i> <i>Striatites ovalis</i> <i>Striatopodocarpites</i> sp. <i>Weylandites</i> sp. <i>Platisaccus papilionis</i> <i>Lundbladispota</i> sp. <i>Klausipollenites</i> sp. <i>Vitreisporites</i> sp. <i>Alisporites ovatus</i> <i>Protohaploxypinus</i> sp.	—	
1100		—	
1184		—	
1243		—	
1318		—	
1322		—	
1548		—	
1580		—	
1632		—	
1707		—	
1743		—	
1757		—	
1875		—	
2032		—	
2730		—	
2907		—	
3274		—	
3325	—		
3434	—		
4172	—		
4173	—		
		G u a d a l u p i a n	L o p i n g i a n
	PERMIAN SERIES (Jin et al., 1997)		
		Cisuralian	

Fig. 5. The stratigraphic distribution of the miospores

Фиг. 5. Стратиграфско разпространение на мiosпорите

Jk tr(Rbg` qrbgl hcs 'Ok`sd U+3(+KH *hironqlsdr* ro+ *Oqnsng`okwwohmt r* ro+ *Oqnsng`okwwohmt r`l ntku*, *hgh`l` mrrnmt r*(G`qs+ *Oqnsng`okwwohmt r odqedbstr*+ *Oqnsng`okwwohmt r`l oktr`A`kl d ds Gdmmkx*(G`qs 'Ok`sd H+0(+ *Rsqh`sn`ahllsdr`162/1* (+ *Rsqh`snl nmnrb*, *blsdr* ro+ *G`l`h`onkklmsdr* ro+ *Bxb`cnolsdr fk`adq`Kt*, adq ds V`sy(G`qs+ *E`hironqlsdr rbg`tadqfdqh`On*, snmte ds Jk tr(Rbg` qrbgl hcs+ *Uhs`sm`dkdf`nr`Y`t*, dq+ *Khl`hironqlsdr k`str`Kdrbglij`Itf`ronqlsdr* ro+ *Jq`dtrdironqlsdr* ro+ *Bnrs`onkklmsdr* ro+ *Ktdbj`ironqlsdr`uhjj`h`d`Onsnmte ds Jk tr*(Jk tr`Ok`sd H+0/(- Pt`msl`shudkx`sgl`rrdl`ak`fd`hr`chrsmf`trgdc`ax`sgd`ghfg`bnmsdms`ne`u`qnt`r`rodbhtr`ne`*Uhs`sm``mc`Ktdbj`ironqlsdr`*

Sglr`Ynmd`nbbt`ohlr`sgd`knvdq`o`qs`ne`sgd`Gq`aqn, un`L`a`-`cdosg`hmsdqu`k18/6-0764`l` (hmNQ,0`L`hpn, un`Anqdgndk-

O`kxmnymd`L`2

Sgd`toodq`o`qs`ne`sgd`rdbshnm+eqnl`0437`l`to`sn`sgd`sno+`hmc`b`sd`r`pt`msl`shud`chredq`m`bdr`lm`sgd`oqdr, dmbd`ne`sgd`s`w`*Vdxk`mchsd`rsqh`str`Ktadq`dw`l`m*, rnmtr(T`sslmf+ *Ok`sxr`bbtr* ro+ *Ok`sxr`bbtr`o`olk`hnmr`Onsnmte ds Jk tr+`Oqnsng`okwwohmt r`l`oktr`A`kl`d`ds`Gdmmkx*(G`qs`Ok`sd`H+0(+ *Oqnsng`okwwohmt r`h`olctr`A`kl`d`ds`Gdmmkx*(A`kl`d`ds`Ok`x, enqc+ *L`qrt`ohkklmsdr`ro+`E`hironqlsdr`y`oedh`On*, snmte ds Jk tr- Sgd`knvdq`antmc`qx`ne`sgl`Ynmd`hr`l``qj`dc`ax`sgd`hmsq`ct`bshnm`ne`rdudq`k`onkklm`s`w`9`*Ktncak`chronq`ro`Ok`sd`H+01(+`hironqlsdr`ro`Ok`sd`H+1(+`hironqlsdr`okb`str`Ihya`Ok`sd`H+4(+`Rsqh`sn, oncnb`qolsdr`ro+`Khl`hironqlsdr`udrlbt`krtr`Rbg`q, rbg`l`hcs+`Rsqh`shdr`q`bgsdqh`Jk`tr`Onsnmte+`Rsqh`, shdr`ro`Ok`sd`H+6(+`Rsqh`sn`olmsdr`l`hbqr`G`qs`Sgd`sxolb`k`rodbhl`dnr`lm`sgd`rrdl`ak`fd`mc`s`w`kij`d`*Chr`bbhsdr`rsqh`sd`Vdxk`mchsd`Bxb`cnolsdr`Mtrj`nironqlsdr`mc`Jk`tr`onkklmsdr`qd`udqx`bnl`l`nm`Sgd`l``whl`tl`ne`rnl`d`rodbhtr`enq`Toodq`Odql`h`mrdch, l`dmsr`kij`d`sgd`hmc`dw`s`wnm`Ktdbj`ironqlsdr`uhjj`h`d`mc`Odql`h`m`Uhs`sm``qd`chr`ood`q`hmf`s`sgd`sno`ne`sgd`rdbshnm`Sgd`toodq`antmc`qx`ne`sgd`L`2`Ynmd`hr`l``ml`edsdc`ax`sgd`bnl`l`nm`nbbt`q`dmbd`ne`rnl`d`rod, bhr`ne`Chr`bb`sd`onkklm`fq`hmr`rtbg`r`*Jk`tr`onkkl, mlsdr`rbgk`tadqfdqh`Onsnmte ds Jk tr*(I`mrrnmt`r+ *Jk`tr`onkklmsdr`rs`oknlh`l`mrrnmt`r+`Uhsq`dironqlsdr`ro+`Fms`bd`donkklmsdr`ro`Ok`sd`U+1`mc`Ktm`shronqlsdr`ro`Sgd`lq`ood`q`mbd`l``qj`r`sgd`a`rd`ne`sgd`Sqh`rrlh`Sgd`Ynmd`hr`knb`sd`hmsgd`toodq`o`qs`ne`sgd`Gq`aqn, un`L`a`-`cdosg`hmsdqu`k0646-0/76`l` (hmNQ,0`L`hpn, un`Anqdgndk-***

Correlation and botanical interpretation

Rnl`d`rsq`shfq`oglb`hmsdq`ods`shnm`bnmbdq`nmf`sgd`bnqqdk`shnm`F`qlfnq`idu+`T`sslmf+0887`ne`sgd`dmc`ne`Odql`h`msq`nrhshnm`adcr`eqnl`sgd`Bdmsq`kDtqnod`m`Anqd`k`mc`Sdsgx`mA`rhm`Aqntslm`ds`k+0887`qd`hmbnmr`rsdms`vlsq`sgd`dwrshmf`l`hbqnek`q`rs`sh`fq`oglb`c`s`-

Hm`cclshnm+sgd`rt`ffdrshnm`sg`s`sgd`K`sd`Odql`h`m`ne`L`hpnun`hr`knb`sd`hmsgd`knvdq`o`qs`ne`sgd`Bdmsq`k`Dtqnod`m`A`rhm`hr`mns`rtoonq`sd`ax`bt`qqdms`klsq`n, rsq`shfq`oglb`c`s`-

T`sslmf`mc`Oh`rdbj`h`0884`g`r`l``cd`bnqqdk`shnm`adsvddm`mf`q`m`Dtqn`l`dqhb`m`mc`B`sg`xrlh`m`l`hbqnek`-

Sgd`Ydbgrsdhm`eknq`hr`bnl`onrdc`l`hmx`ne`bnmh, edqr`rtbg`r`*Tkl`nh`+Ordtcnunskyh`mc`odks`rodq, l`bdntr`eknq`L`dxdm`0876*(- *Aqslrg`Odql`h`m`r`b, b`sd`mc`l`nmrt`kb`sd`l`hironqdr`g`ud`addmoqnonrdc`ax`Bk`qj`d`0854*(-

Sgd`klsd`alr`bbnlc`onkklm`K`sd`Odql`h`mg`r`addm`j`mvm`eqnl`bnmledqr`*Jdqo+0885*(`mc`osdq`cnrodql`r`*Ktdbj`ironqlsdr`bnmledqr`L`innth`bd`d`g`r`addmj`mvm`eqnl`sgd`Dtq`l`dqhb`m`bnmledqr`L`dxdm`0876*(-

Sgd`l`tksh`dmh`sd`r`bbnlc`onkklm`rrhf`m`akd`sn`enql`fdmdq`rtbg`r`*Rsqh`sn`ahllsdr`mc`Oqnsng`o, kwwohmt`g`r`krn`addmj`mvm`eqnl`sgd`F`nmc`v`m`fkarrnosdq`cr`eknq`Ok`xenqc`Chm+1`/`/`/`(-*

L`tksh`dmh`sd`r`bb`sd`enql`fdmdq`kij`d`*Uhs`sm``mc`Vdxk`mchsd`qd`rrnbi`sd`vlsq`K`sd`Odql`h`m`odks`rodql`r`*

Bxb`cnolsdr`-`sgd`Bxb`cr`rl`nnsq`l`nmrt`kb`sd`onkklm`hr`o`qslbt`k`qkx`j`mvm`eqnl`Bxb`c`kdr`

Sgd`NQ,0`L`hpnun`rrdl`ak`fdr`gnvdudq`bnms`hm`l`nrs`ne`sgd`dkd`dmsr`cdrbql`adc`enq`sgd`Toodq`Odql`h`m`cdonrhr`Sxolb`k`fdmdq`ne`S`dmh`sd`chr`bb`sd`onkklm`qd`*Oqnsng`okwwohmt`r`G`l`h`onkklmsdr`Kt, m`shronqlsdr`mc`Ktdbj`ironqlsdr`Sgd`rodbhtr`Ktdbj, hironqlsdr`uhjj`h`d`hr`bnl`l`nm`lm`sgd`Ydbgrsdhm`ne`Vdrsdqm`Dtqnod`Ulrrbgdq+0860*(`mc`hr`d`qldrs`nb, btqqdmbd`hr`J`y`mh`m`lm`sgd`Qtrrh`m`rsq`snxod-

Hl`onq`ms`ronqnl`nqogr`hm`K`sd`Odql`h`m`cdonrhr`qd`*Ktdbj`ironqlsdr`uhjj`h`d`Gq`aqnun`L`dl`adq`E`k`hironqlsdr`y`oedh`Jk`tr`onkklmsdr`rbg`tadqfdqh`Mtrj`nironqlsdr`mc`Uhs`sm`+`vglbg`vdq`entmc`lm`sgd`rdchl`dmsr`eqnl`NQ,0`L`hpnun`Anqdgndk-*

Sgd`rrdl`ak`fdr`ne`L`hpnun`Enql`shnm+sgd`knvdq`o`qs+`ne`sgd`l`dms`hmdc`anud`anqdgndk+`hmbkt`cd`@k`*hironqlsdr`hklmsdr`G`l`h`onkklmsdr`Onsnmt`l`ironqlsdr`Mtrj`nironqlsdr`Vhknmsdr`Bnqc`hsm`+`Udrhb`ronq``mc`Rsqh`shdr`Sgd`rd`rrdl`ak`fdr`qd`rhl`lk`q`sn`sgnrd`cd, rbgql`adc`hm`o`qs`ne`sgd`Knvdq`Odql`h`m`lm`sgd`Cnm`dsy`A`rhm`Hmrrnu`ds`k+0865*(`mc`eqnl`sgd`@tst`nh`m`lm`o`qs`ne`Dtqn`l`dqhb`Aqntslm+`Jdqo+0883(`mc`B`m`, c`I`mrrnmt`r+0851: *T`sslmf+0883*(- *Hm`Klax`Fygdki`m`>`-`@rrdki`m`rrdl`ak`fdr`bnms`lm`l`nmr`bb`sd`B`m`m`mnqonktr`mc`sxolb`k`Dtqn`l`dqhb`ms`w`-*

@kk`Odql`h`monkklm`mc`ronq`ds`w`nardqudc`ct`q`hmf`sgd`bnt`qrd`ne`sgl`rstcx`qd`hkt`rsq`sd`hm`Ok`sd`r`H-U

Sgd`qdk`shud`onrshnm`ne`sgd`rst`chdc`qd`r`nm`sgd`bnms`hmdms`ne`O`mf`d`vnt`k`g`ud`g`c`rhfm`h`b`ms`h`ekt`dmbd`ax`sgd`bkl`sd-

Conclusions

Sgd`Onkklm`hr`oqdc`nl`lm`ms`'81-1S`sn`88-4S`(`mc`onrrlax`g`c`addmsq`mronqsd`nudq`kmf`chrs`mbdr-

Sgd`dd`@rrdl`ak`fd`o`kx`nk`f`b`kynmdr`g`ud`addm`drs`ak`rgdc`enq`sgd`Odql`h`meqnl`rdchl`dmsr`ne`NQ,0`L`hpnun`Anqdgndk-

Sgd nkcdq`rrdl ak fd`L hpnun Enql`shnm`lr`o`qs ne sgd Knvdq Odql`h`m`mc`lr`sgd`dhrs`@rrdak`fd`Ynm`d`'O`kxmynd`L`0`/hm`Odql`h`m`@tst`mh`m`(`fd`

Sgd rdbnmc`'O`kxmynd`L`1`(`mc`sgd`sglhc`'O`', kxmynd`L`2`(@rrdl`ak`fd`Ynm`dr`'ansg`hmsgd`Gq`aqn, un`L`dl`adq`rgnv`Toodq`Odql`h`mbnl`onrlshnm`mc`rhl`lk`q`sn`nm`dr`g`ud`addm`qdonqsd`eqnl`Vdrsdqm`Dtqnod`'Aqntshms`k`+0887`(-

O`kxmyrsq`shf`q`oglb`bnqgd`k`shnm`qd`mv`onrrhald`vhs`g`Odql`h`m`rrdl`ak`fdr`hmsgdq`o`qsr`ne`sgd`vnqk`'F`qfnqldu`+Tssmf`+0887`Uhrbgdq`ds`k`+1`//3`(`r`sgnr`d`eqnl`sgd`Ydbgrsdm`mc`o`qs`ne`sgd`Qnsghf`dmc`ne`Vdrsdqm`Dtqnod`hm`F`dql``mx`'Dtqn`l`dqhb`(`ax`Rbg``qrbgl`hcs`'0852`(-

References

A`kl`d`+`A`-`D`+`I`-`O`E`Gdmmlkx-`0845`-`Sghsd`ronqnl`nqogr`eqnl`@trsq`h`m`Odql`h`m`rdchl`dmsr`-`@trsq`h`m`Intqm`k`ne`An,`s`mx`+`3`/`13`-`150`-
Aqntshms`I`+`G`-`J`dqo`-`0883`-`@rodbsr`ne`Odql`h`m`o`k`dnans`mx`mc`o`kxmyrsq`-`WU`@`mdv`enql`f`dmtr`ne`aqn`c`k`udc`K`sd`B`qannledqnr`mc`D`qkx`Odql`h`m`mnsqgdqm`gdl`hrogdq`bnntedqr`-`Qdu`-`O`k`dnans`-`O`kxmy`+`72`/`130`-`140`-
Aqntshms`I`+`G`-`@`rrntl`h`L`-`Dk`V`qsh`O`Eqdxsd`+`G`-`J`dqo`+`B`Ptdr`c`-`0887`-`Sgd`Odql`h`m`a`rhm`ne`Shcc`r`+`Ant`@bgntbg`mc`J`gdmlq`'Bdmsq`k`L`nqbnbn`(-`Hn`Bq`rpt`hm`Rnk`d`+`R`+`E`-`A`qqlq`'Dcr`(-`Odq`Sdsgxr`3`L`el`-`L`tr`-`Ghrs`-`M`-`s`O`qir`+`068`+`146`-`167`-
Bk`qj`d`+`Q`-`E`-`0854`-`Aqshrg`Odql`h`m`r`bb`sd`mc`l`nmrtk`b`sd`l`hronqdr`-`O`k`dmsn`kfx`+`7`+`211`-`243`-
Clandq`@`E`0860`-`Bnqc`h`kdr`onkdm`ne`mf`q`k`mc`-`M`thg,`m,`h`rklcnu`sd`kj`h`hrs`-`Fdnk`fth`@qsh`h`O`kxmynd`fth`-`H`A`h,`rsq`shf`q`eh`+`21`+`4`-`55`'hm`Qtrrh`m`(-
F`qfnqldu`+`L`+`I`-`Tssmf`-`0887`-`Rdchl`dmsn`kfx`+`o`kxmyrsq`shf,`q`ogx`+`o`kxmy`bldr`mc`sgdl`k`l`stqhx`ne`Toodq`Odql`h`m`qnbj`r`ne`J`nkftxd`H`k`mc`+`A`qdnr`Rd`+`Qtrrh`-`-`Atk`B`m`c`-`Odsqndt`l`-`Fdnk`+`35`+`0`-`00`-
G`qs`+`F`-`E`0853`-`@`qduliv`ne`sgd`bk`rrleb`shnm`mc`chrsqatslsm`ne`sgd`Odql`h`m`l`hronqdr`cl`r`bb`sd`sqh`shs`B`h`m`pt`l`d`B`nm,`f`dr`H`sdqm`shnm`k`cd`Rsq`shf`q`oghl`ds`cd`F`dnk`fth`-`0888`-`annledq`-`Bnl`old`Qdmct`'O`qir`+`0852`(+`2`+`0060`-`0088`-
H`m`rrnu`+`J`+`@`-`J`qyhm`+`D`-`Rbgu`qyl`m`-`0865`-`@sk`r`ne`l`h`bqronqdr`mc`onkdm`f`q`hnr`eqnl`sgd`Toodq`B`qannledqnr`mc`Knvdq`Odql`h`m`ne`C`m`d`y`A`rhm`-`L`nrj`u`+`Mdcq`+`048`o`-`hm`Qtrrh`m`(-
I`m`rrntlr`+`I`-`0851`-`O`kxmyrsq`ne`Odql`h`m`mc`Sgh`rrlb`rdch,`l`dmsr`Od`bd`Qhldq`qd`+`Vdrsdqm`B`m`c`-`-`O`k`dmsn,`f`q`oglb`+`@as`-`A`+`00`/`87`o`-
I`m`-`X`+`A`-`Q`-`V`qck`v`+`A`-`E`F`h`m`rsdq`+`F`-`U`-`J`nsk`q`-`0886`-`Odql`h`m`bgqnmrsq`shf`q`oglb`rtachulrhm`-`-`Dohrncdr`+`1`/`0`-`04`-
J`kmj`n`+`L`-`Dc`(-`ds`k`0862`-`Fdnk`fth`ds`odsqnk`ds`f`r`onsdsh`k`cd`k`Atkf`qhl`ct`Mnqc`-`'Q`onq`hndch`+`Sgd`d`H`-`Rsq`sh`f`q`oghl`(-`Rnh`+`F`denmc`ct`L`hms`-`ct`dnulqnm`-`ds`cd`kd`+`t`+`Cdo`qs`-`F`dnk`+`617`o`-`hm`Qtrrh`m`(-
J`dqo`+`G`-`0885`-`Onrs`U`qrb`m`k`sd`O`k`dnylnb`Mnqsgdqm`Gdl`h`rogdq`f`xl`mrodql`r9`sgd`nmrds`sn`sgd`L`drnylnb`-`-`Qdu`-`O`k`dnans`-`O`kxmy`+`8`/`152`-`174`-
Kdrbgj`+`F`-`0845`-`Ronqdm`tr`cdl`R`synm`cdr`Ydbgrsdm`unm`Mdtgne`adh`Etk`(-`-`O`k`dmsn`f`q`oglb`+`@as`-`A`+`00`/`011`-`031`-
M`tf`n`k`mj`g`+`R`+`G`-`J`dqo`-`0885`-`@rodbsr`ne`Odql`h`m`O`k`dn,`ans`mx`mc`O`kxmyrsq`-`WU`-`Nm`sgd`nkcdrs`j`m`v`m`odk,`s`rodql`r`vhs`q`ch`kx`rxl`l`dsqhb`k`nutkledqnr`clbr`eqnl`

Sgd enrrik`qdbnqr`qd`qdrts`ne`sgd`lmots`mc`cdonrlshnm`kbnmclshnm`enq`ok`ms`qdl`hnr`-`Sgd`h`pt`k`h`x`k`n`cdodmcr`nmsgd`s`wmm`l`h`k`udksn`v`glbg`sgd`qdl`hnr`b`mad`cdsdql`hmdc`-

@hj`mv`k`c`f`d`l`dmsr`9`Sgd`tsgnr`vntk`k`h`j`d`sn`sg`mj`L`qr`-`It`k`d`ssd`K`bgdu`+`ntq`qds`hdc`bnkld`ftd`+`enq`sgd`j`hmc`m`rr`sn`bnm`r`h`fm`tr`gdq`bnk`k`d`bslsm`ne`Odql`h`m`o`kxmyrsq`f`h`k`r`k`h`cdr`-`Sn`Oqne`Id`m`Aqnt,`sh`m`eqnl`sgd`Cdo`qsl`dms`ne`O`k`dnans`mx`mc`O`kxmyrsq`f`h`m`sgd`O`qir,`UH`T`h`ud`q`rl`h`x`"O`h`d`q`d`ds`L`q`hd`B`t`q`hd`"+`vd`qd`sg`mj`dc`enq`ghr`gdkoet`k`clrb`tr`r`h`nm`mc`bnm`r`ts`shnm`nmsgd`o`kxmy`nqog`s`wmm`l`x`-

sgd`J`tmft`q`h`m`'toodq`nrs`Knvdq`Odql`h`m`(`ne`sgd`Enqd,`T`q`kr`'Q`trrh`(-`-`Qdu`-`O`k`dnans`-`O`kxmy`+`80`/`24`-`51`-
L`dxdm`+`R`-`U`-`0876`-`E`tmc`'l`dms`kr`ne`O`k`dnans`mx`-`Knm`c`nm`-`Bg`ol`m`mc`G`k`Ksc`+`321`o`-
Oedeedq`nqm`+`G`-`V`-`087`/`-`@`mnsd`nm`sgd`sdql`"tok`mc`eknq`"-`-`Qdu`-`O`k`dnans`-`O`kxmy`+`2`/`046`-`047`-
Ok`xenqc`+`F`+`Q`-`C`hnm`-`1`//`-`O`kxmyrsq`shf`q`ogx`ne`toodq`O`k`d,`nylnb`rsq`s`'S`q`inr`F`qnto`(@`l`ynm`r`A`rhm`Aq`yik`9`o`qs`nmd`-`-`O`k`dmsn`f`q`oglb`+`@as`-`A`+`144`o`-
Onsnm`+`Q`+`V`-`J`k`tr`-`0843`-`D`m`f`d`R`onqdm`f`sst`mf`dm`cdr`k`ohm,`dm`R`ky`f`d`ah`f`dr`-`-`Fdnk`f`h`r`b`g`dr`I`g`q`at`bg`+`57`+`406`-`435`-
Qds`kk`bj`+`F`-`0888`-`Odql`eqnrs`o`k`dnb`k`l`sd`ne`Odql`h`m`o`k`dnm`r`hm`sgd`F`dq`q`m`f`nm`f`un`k`b`m`b`e`bldr`ne`Mdv`Rntsg`V`k`r`-`-`@trsq`k`Intqm`D`qsg`Rbh`+`35`+`0`+`00`-`11`-
R`l`nlk`n`ub`+`R`-`Q`-`0842`-`Onkdm`mc`ronqdr`eqnl`sgd`Odql`h`m`cdonrlsr`ne`sgd`Bgdqcxm`mc`@j`xtahnrj`qd`r`+`br,`T`q`kr`sq`mrk`shnm`ax`L`-`J`-`D`h`r`+`0850`-`-`N`j`k`gnl`-`Fdnk`f`h`k`R`t`q`udx`+`B`h`q`b`k`q`45`-
Rbg`qrbgl`hcs`+`E`0852`-`Ronqdm`tmc`Gxrsq`bgnrog`dq`d`ddm`tr`cdl`Ydbgrsdm`unm`A`uch`m`f`dm`hm`cdq`V`dssdq`t`-`-`O`k`dmsn,`f`q`oglb`+`@as`-`A`+`002`+`27`-`80`-
Rbgj`dq`+`G`+`L`-`J`t`qyd`-`085`/`-`C`hd`rsq`shf`q`oghrbgd`Rsd`k`m`f`cdr`R`kyrd`chl`dmsr`cdq`Ang`q`tmf`Mq`4`unm`Oqnu`ch`te`F`q`m`c`cdr`Ronqnl`nqogd`m`ng`lsdr`-`-`Atk`-`Hrs`-`Fdnk`+`Atk`-`@b`-`C`-`Rbh`+`7`+`18`-`35`-
Tssmf`+`I`-`0883`-`O`kxmyrsq`shf`q`ogx`ne`Odql`h`m`mc`Knvdq`Sgh`rrlb`qnbj`r`+`Rudq`ct`o`A`rhm`B`m`ch`m`@qshb`@qbg`h`odk`f`-`-`Fdnk`R`t`q`udx`B`m`Atk`+`367`+`0`/`6`o`-
Tssmf`+`I`+`R`-`O`h`rd`bj`h`0884`-`Sgd`o`kxmyrsq`ne`Mnqsgdqm`Bnm,`sh`m`dmsr`9`qduliv`-`-`Hn`B`Rbg`nkld`+`O`@`+`S`-`L`-`O`d`qs`+`C`-`R`-`T`k`dq`Rbg`nkld`'Dcr`(-`Sgd`Odql`h`m`ne`Mnqsgdqm`O`mf`d`-`O`k`dn`f`d`n`f`q`+`o`k`dnb`k`l`+`rsq`shf`q`+`O`-`Ad`q`dm`-`Ro`q`m`f`dq`Udqk`f`+`125`-`150`-
Uhrbgdq`+`G`-`0860`-`Sgd`Odql`h`m`mc`Sgh`rrlb`ne`sgd`J`m`f`r`b`nt`qs`nt`sk`ld`+`H`qk`mc`@`o`kxmyrsq`f`h`k`h`udrs`f`shnm`qdk`sd`sn`qd,`f`hm`k`rsq`shf`q`oglb`oq`n`k`d`r`hm`sgd`Odql`h`m`mc`Sgh`rrlb`ne`Vdrsdqm`Dtqnod`-`-`Fdnk`R`t`q`udx`ne`H`qk`mc`+`Rod`b`o`,`odq`+`0`+`003`-
Uhrbgdq`+`G`+`B`-`U`-`K`nnx`+`L`-`D`-`B`nk`h`m`r`nm`-`G`-`A`q`h`m`j`g`tr`+`I`-`G`-`@`-`u`m`J`n`m`i`d`m`at`qf,`u`m`B`l`ss`dq`+`V`-`L`-`J`u`r`b`g`m`dq`+`L`-`@`-`R`d`og,`snm`1`//`3`-`D`m`ul`q`n`m`l`dms`k`l`ts`f`d`m`dr`ct`q`m`f`sgd`dmc,`Odq,`l`h`m`d`bn`k`f`h`k`b`q`r`r`-`-`Hn`B`O`q`n`b`d`d`c`m`f`r`ne`sgd`M`sh`m`k`@b`cdl`x`ne`R`b`l`d`n`d`r`ne`sgd`TR`@`+`0`/`0`+`24`+`01841`-`01845`-
X`mdu`+`R`-`M`-`0882`-`Odql`h`m`hm`Mnqsg`Atkf`q`h`-`H`Enql`k`k`l`sgnr,`sq`x`f`q`ogx`qdk`sd`sn`sgd`Toodq`Odql`h`m`-`-`Fdnk`f`h`+`A`h`+`120`+`2`-`13`-
Y`i`i`nou`i`e`e`a`i`a`2`/`-`/4`1`//5`a`+`i`d`e`a`o`a`c`a`i`a`-`a`o`i`a`17`-`/8`1`//5`a`(-