

he_^_g,_@b`y`ZsZgZ^gbfbfhsgZyhesZi_kd,hZe_\jblh\]ebg dZd
f`_e`^gbdhf\hujkdb_E m]bg_Xp^bq,_\y[møbbgebj_qgub_fhjkdb_KZdk
lmfbg)h h l e h`_g Z y,j h x s Z y o f Z e h f h s g i Z y q d i Z_k d t\k m]e b g k d h j m [u f b
h[ehfdZ bte bke h b k l u d e h`_g k d h j k d b f p Z d h \ b g Z f d Z d e`^g b d h b u`
e`^g b d h h j k d b k e h b j_f_g b h k e`^g h j e h`^g`g_bjy,dj u l u i h a^g`c r b f b
f h j k d b f h l e h`_g b y f b

l_j\hgZqZewl g Z q d b k e h d h j j_e b j h \ Z k e d Z k d b f e b [h ^ b g u f b e b
f_k l g u f b l j Z l b] j Z n b q _ k l d b j f Z a ^ _ e _ g l h y a f b g <_G K Z d k : . l . l m f b g h \
k h i h k l Z \ e y e k b ^ b g b p Z f b b h g Z e v k o h d u G K Z d k l 245, 1947] b h l g _ k e b
g b ` g x x q Z k l d] h j b a h g l h e h`_g b Z d k b f Z e v g l e] h`_g`g Z y Z j h \ k d h f m
k h \ j _ f _ g g g b f _ g d e Z l m k j j ^ g x x h e s m d f _ k k h \ k d h f m q g u i _ k d b
k Z g q m] h \ k f h j k r d b z e _ \ j b b u e b g u d Z a Z g p _ \ (k f h j k r d b _ k d h j b a h g l Z f
Z \ _ j o g x i x Z q d r d a u j y g k d b f h z j] b g k d h j f m a h g l Z f

l j b h [h [s _ g k b j Z l b] j Z n b q f Z d b j d Z e h w l h f m q Z k K l E n L j h b p d b c
[1966, klj. 35, 36, j b k 10] h l g _ g b ` g b i _ k q Z g h u l e h`_g f b y e`^g b d h h l e s l d
i j b [j _ ` g u f n Z p b y f z k e h « k » b « » ,] e b g b - k Z b _ \ j b l h \ a n Z k l v d l b i b q g u f
n Z p b y k f e h y » (k Z g q m] h \ k f h j k r d b z e _ \ j o g x x _ k q Z g q Z k l v d k e h x »
(d Z a Z g p _ \] k d b a h g l h f _ l b i e b a g Z d e m [h d h Z a f u \ Z i h ^ h r \ k e h y » ,
h [h k g h \ Z h e g l b g _ g l Z e j v g u a l b k e h`_g b a j y g k d h j h b a h g l d l d Z a Z e l k y
\ u ^ _ e _ g l z j] b g k f h j k d b k e h _ k q b l , Z q l h g l e b q Z x i l k k y h k l Z n Z m g u
d Z a Z g p _ \ k d h] h .] h j b a h g l Z

< 1966]. h [g Z ` _ g f b y h e i h k _ e d Z j h g p h \ u h e b ^ _ l Z e v g a h m q] g r a i i h c
k h l j m ^ g b d g k l b l m] l Z h e h] b h _ h n b a b k d b : G K K K b K G B B = = b . F K Z z
k h k l Z] Z [h l Z e B = m ^ b g Z d j h i Z e _ h g , l K e . h k j m o h j m (e h l \ Z e h] _ h o b) f b d
: . < = h e v [(j e b l h e h b) k l j Z l b] j , Z G : . O Z e n b g ^ Z Z l h f b k l l . G K h e h [Z _ \
(k l m ^ _ j g l h n b) a b G Z m q g j m d h \ h ^ k j j Z h l Z f h k m s _ k l \ e k y e L j h b p d b c
(i Z e _ h g l h e h] b k l j , Z l b] j Z n

G _ d h l h j u _ j _ a m e v l Z l u h e _ \ u o g Z [e x ^ _ g b d e Z [h j Z l h j g h] h
f b d j h i Z e _ h g l h e h] b e b k l d b j h] h o b f b q _ k d a m] q _ d h e y e _ d i j b c _ ^ _ g u
i m [e b d Z , p b h y k \ y s _ g g l u e _ r b j h d b f h i j h k Z f e b j _] b h g Z f j h b p d b c , 1967 ;
= m ^ b 1969 ; K m o h j m 1971] G Z k l h y s Z Z l v y f _ _ p _ e v x Z l d j Z l d l m i b k Z g b _
] _ h e h] b q _ k l j h] h g b y _ g g w l h] h g l _ j _ k g j Z j h j _ Z Z d ^ i h ^ j h [g h k \ _ s _ g b _
j _ a m e v l Z l h Z e v g f b j h _ j Z e h] h j h e h] b q _ b d k e h ^ h \ Z n g b , \ u i h e g _ g g h] h
? < R m f b e h . \ h c

= _ h e h] b q _ k l d l m _ g b n q Z k l d k j Z l b] j Z n d y l \ _ j l b q g h u e h`_g b c

H k g h \ g b f t _ d l i h e _ \ u o g Z [e x ^ _ g b e m q Z k [h d _] Z 2,8-5,3 d f \ u r _
i h k _ e d Z j h g p . h ; \ h j _] h \ m k l r h Z f b f _ \ u k h l 1960-65 f g Z ? g b k _ b e b q l h
i j Z d l b q _ k l d _ k Z f h _ g Z m j h \ g f h j y . G Z b [h e h e g h [g Z ` _ g Z ` g y 0-40-
f _ l j h \ Z y Z k l m k l m g Z g _ f Z e h g Z ` _ g g n u p Z k l d h \ _ j o g q Z k l b k h [_ g g h - i h
k d e h g] Z e m [h d h g h l d e b] h \] h j Z k k _ d Z x s t e _ i j h k l b j Z g n k l m 30 C3.
J Z a f _ s _ g k g h \ g j u z o a j _ a j h Z k q b k b h k d _ j b c a y l u o a g b d h [j Z a p i h b \ _ ^ _ g u
l Z [e b p b g Z b k m g d Z d .

< h k g h \ Z g n b l m i Z l Z d ` i h ^ i e y ` _ \ u f g Z d h i e _ g b y g Z f _ e d h \ h ^ v _
\ u o h ^ y a _ e _ g b a _ e _ g h \ Z e h u i _ k d b Z e _ \ j b l u _ j o g _ j h l ^ _ e f Z e h \ h c
k b k l _ (l m j h g Z g l h g) h ^ _ j ` Z s d j m i g u d Z j Z \ b k e h Z e _ \ j h e , b l j h k e h b
e b g a _ e l u b _ k d k n h k n h j b l h \ u f b \ Z d , Z r h j e _ n b p b j h \ Z l g g e u _ j _ \ y _ \
j Z d h \ b g h e e x k d h \ h f q b k e _ -] b] Z g b g d h p o j Z f d h g d j _ p b j b l Z k _ j g h
` _ e l u _ \ d e x q _ g b y j h a b l Z F _ e h \ u _ h l e h ` _ g b a y Z e _] Z k l m [] h j b a h g l Z e v g
g Z [e x ^ Z x i k y e h] b k _ d e Z ^ k l m] e Z f h 3-5° ; f _ e d b k [j h k b g Z ^ \ b] b [e b a b
\ _ j o g _ d h g l Z d l Z f _ l g e _ ^ w \ _ l j b \ Z g l j h ^ i _ k l j Z h y d j Z k l d d j Z k g m j u b

nbhe_lh\mj-uhgDjh\efy_eh\ubjh^eZ\gim^gbfZ_bkjh^mjh\gydb3
df\ur_ihk<hjhgp,h^hklb]Z- hfdbehf_lh_lf_lh9d10 f gZ^_dhGZ
mqZkfd_^m3 dfb5,3dfhgZ_a djZafuI ZZ fieblm^jhrfhhb^ghe_8-10 f b
g_h^ghdjZlogh^h^mjh_igew`.Z

Djh\efy_eh\uidjh^g_k_kle_^ubgZfbq_kcdhglhZdkZ_j_dju\Zxsbfbb
q___jlbqgukfch yf&klj_qZxlfkyh]hqbke_g_gedbl[e h d b j,Z a h j \ Z g du _
kf_s_ggZ LZ d`_^bg bq g u a d b __jhh[jZ akglue_Z,^d b h l h j u c p _ l \ _ j l b q g u _
]jZ\b c g Z e _ q g u e h c d b Z l y g m \ l u h g d b _ e h \ u _ k d g Z e m [b g m g _ k d h e v d b o
f_ljh\

GZdjh\ef_eh\uidjh^aZe_]Zblgy(30-40 f_ljh\ZyhsZhleh`_gbc,
khklhybZy^ \ inZoa_kdm]ebgkdfh\ZdeZkbZjZba^_eyxso_iczqidbk.d.h\
IZqdZ(\Zemg g um]eb)g b j b h [eZ^ZxishZ h ^Z]mj u \ Z e m g g um] e b g d b
kih^qbg_ggiujfthk eh y f b Z \ u d Z e m g g j Z e _ q g , b p Z h e _ q g i u & d . h & i h j h ^ _
fgh]lkj_^g b o d j m i g u l e m g ^ h h e _ j b [Z a Z e v l Z e h \ u z e _ \ j h e b ^ h h 3 f).
Kh^_j`Z g j m [u b [e h f d K K K m o h j m d h j \ Z ^ _ e y a e \ Z r b \ Z g b h [t _ f g u _ k Z
hij_^_eye b . K G / K h e h [Z _ \ k f i h f h s v x i j b k l Z \ g h] k e h l g h f _ j Z = H 1 .
Kh^_j`Z g h e h f d h h j h ^ f _ a h k l Z & k m k] e b g d Z _ e b 3 d - h 0 0 d] f ^ 3 , g h h [t _ f g u c
_klukh(d,8-2,0]/k f ^), q l h i h d Z a u \ Z g Z q b l _ e m g j m h x l g _ g g i m h j h v ^ u B g h] ^ Z
kj_^g y \ _ j o g y q Z k l i v Z q d b e Z [k e h b , k b Z n q b k e f h _] Z d e Z k g l h m f _ g v r Z _ l k y
lh^qbg_g g Z i q d k e h p Z e _ q g i h] k h d Z \ Z e m g j g Z \ b c g h j Z h e _ q g (b d Z 7 - 1 f)
hdjZr_guj`Z\hdjZkgupc_lk_k_jg`h_e l u f b i y l g Z f h l \ d e x q _ g p j h a b l Z
F_k l Z f i b Z q d i Z e g h k l j Z a f u l Z g Z d j h \ e f _ e Z _ ` b l h g d b c p _ l d \ b ^ g u k e h c
h k l Z l h q g h] h \ Z e Z h e g q h g b d Z

IZqdZ(k_jub`_eluZe_\jb bu_k d b E h` b l k g y Z i Z q d l m b e b j y f h g Z
f_eh\ui_hjh^uKeh`_Z Z _ \ j b l Z o f b _ e d b f i b _ k d Z f l d e x q Z x s b i h b ^ q b g _ g g u _
keh]bebgkkehbkllhklgd,ZhjbahglZ,ejvg_Zy^bZ]hgZevlgZy_evgueh y o -
dhk,Ziy_jbklhbgah\b^geZy\b^_agZdjy\ [b H [u q g l u h g d b j h i e Z k l f r b j h] h

be tk _ j h] le b g b k l Z p h _ \ j b] Z b g w _ [h e v r (b h 0,8 f) k e h i b _ k d k Z j h i e Z k l d Z f b
g Z f u \ g h l] h j n . Z < g m l j i Z q d i j b i h e _ \ h f i b k Z g h l b _ q _ g j u m i g u e b g a [u n j h] h
k e h b k l b p h f Z k k b \ g Z p h _ \ j k ^ 1 Z 2 f) k j Z k k _ y g j Z h e v d h _ c ^ d b f l Z e m g Z Z b
l Z d ` e b g a Z e _ q g] h j Z h t (0,7 f) . H [s Z f y s g h k ^ 1 1 f .

< g b ` g _ q Z k l i b Z q d (h [. g 31 , j Z k q b k 3) d Z c ^ _ g Z i d h \ b g r d f b j Z f b g b n _ j
Buccella frigida, Cibicides rotundatus, Cribronion obscurus, Protelphidium lenticulare, Pr.
orbiculare, Pr. parvum, Cribroelphidium goesi, Elphidium sp., Elphidiella groenlandica <
\ _ j o g _ d k e h Z e _ \ j b l h \ u e o g h ([. g 31 j Z k q b k 4 d Z Elphidiella groenlandica b
Elphidium ex gr. excavatum] = m ^ b 1 9 2 4] .

F Z d k b f Z e f l g Z y h k l i Z q d b , 7 f , g h g _ j _ ^ d b g Z h d j Z s Z ^ h k 0,7,5 f b a
a Z g _ j h \ g h k i h e h r \ u b d j h \ e b Z q d Z h [j Z g Z r b j h d b k i h d h c g k u d e Z ^ k b
i _ j b h ^ 0,7 - 1,5 d f b Z f i e b l m ^ h 1 5 c 10 f , k e _ ^ m x s b [s b q _ j l Z a o Z _ j h \ g h k l y f b
i h ^ h r \ u < [e b a d j h \ e b h y \ e y x l k y a d e h d Z e v g Z j m r _ g b f y e d b k d e Z , ^ d b
j Z a j u \ u .

l Z q d Z (\ Z e m g g u m] e b g h k g h \ g i Z j h ^ Z [m j u g _ k e h b k] i j u Z \ b c g h
] Z e _ q g Z h e m g g u m] e b g k d h ^ _ j ` Z g j m [u b [e h f d h 1 8 ^ h 10 % , h l 160 d] ^ h 100
d / f ^ 3 ; h [t _ f g u c (2,04 - 2,2] / k f) i h q l b _ f _ g y _ , l b y k f h l g y Z a e b q g h m ^ _ j ` Z g b _
f _] Z d e Z k q h h k \ b ^ _ l _ e v k h h b e v g l m f i e h l g _ g b b h k l Z a i b k Z ^ u K j _ ^ b
\ Z e m g g h] d j m i g (u h f) m] e h \ Z h u e h f d h e _ j b] Z [[j h e _ j b] Z a Z e v l Z ;
\ k l j _ q Z x l v Z y e m g a u Z i Z ^ l g Z h c f u j k d k b _ g b h j n b j h b e Z f i j h n b j h F \ k l Z f b
(j Z k q b k l d Z [4 g 31) i Z q d Z h k l h b a ^ \ m e h \ Z e m g g k h h] e b g j Z Z ^ _ e _ g g u o
q _ l u j _ o f _ l j h k e h f f e d h f e h b k l h] k d Z . b w l h g b ` g b k e h t e f _ f l _ g v r m x
f h s g h k (B 4 f) b k h ^ _ j ` b l g v r] j m [u b [e h f d Z \ _ j o g b [d e f h s g u c k \ u r _
5 f) , h [b e _ \ Z e m g Z h f g Z j m ` b k Z e Z l [r k e h b k l h k l j h ^ u Z q d d f u g Z c ^ _ g u
\ k _] h 2 j Z d h n h g Z f b g b n e h j o h c k h o j Z g g h k l b _ y h l g e h ` _ g ; g u e _ _ 14 f

l Z q d Z 3 . E h ` g l Z g y _ j h \ g m j h \ e i Z q d b f h s g h k l v z b a f _ g q b f \ Z k l Z f b
k h d j Z s Z ^ h k y f , f _ k l Z f b _ i h q l b h e g h k l j Z a f u l Z i j _ \ j Z s _ g Z k l Z l h q g u c
k e h j : Z \ h] h Z e m g g] h Z e _ q g (b , 0 5 Z , 5 f) , a Z e _] Z x s i j h h r \ [h e _ i h a ^ g b o
g Z d h i e _ g b c .

H [j Z s Z x l Z k _ [y g b f Z g b Z d b h k h [_ g g k k j l b _ g b k y _ g b ` g _ l d e s b d Z d
a Z e _] Z k e h b k l u h o ^ g u t o l e h ` _ g k j c ^ g i Z c q d f b _ ^ m \ m f i j Z q d Z g Z d h i e _ g b c
y \ g h e _ ^ g b d h \ h j h b k o h ` ^ _ g k b r ^ y h k l j m d l m j g u f d k l m j g u j f b a g Z , d Z f
n b a b q _ k d l h f c k l , \ Z b g Z f b q _ k d c h g f l Z d k Z h ^ k l b e Z x s k e h y , f b l k m l k l \ b x
Z \ l h o l h g g h j p Z g b q _ k h k d Z l j h m q Z k l \ b k e h ` _ g k b _ ^ g _ b c \ _ j o g _ i Z q _ d

ijhkehfhjkdbtoleh`_gbcjhZfbgbn_jZbbwlhfhjZfbgbnbjauZqd2b
ij_^klZ\e_7gxu Zjdlbq_kdlnfkgbfbhj_Ze-vZgdlbq_kdb^hfb 1 \b^hfg
g_hij_^_e_gghh]_hjjZnbqj_kjdh^qgh\uf Ahh]_hjjZnbqj_rkdiibjh\db
^ZgaB = m^b g1966, lZ[6]

Kljh_gbhesbkh[_ggfkleZ]Zxs_bzhjh^jZkij_^_e_bghk[_ggghklb
khklZfZdjhnZmi_ga\heykqblZlqlhhgZeh`_gZmfyZqdZfeb^gbdh\uo
hle h`_g_pZca^_e_ggùkolZ^bZev(guZfblbqgjrb-e^gbdh\uf_e)d h\h^gufb
bijb[j_`ghjkdbf(bdexqZyevlh)\gZdhie_gbyb^bwlh^_jogj^ZqdZ,
k\hxq_j_ ^vmqe_gjZra^_ef_gZ ZpbZev g e f b - hkpbeeylhjg e h y f b
\h^gh]hijhbkoh`^_gby

NZpbZeevlgllheh]bq_hkdhf_gghZqb_boihke_ ^h\Zl_evgZk\l]Zgb_
lhesf`^mf_eh\ufihjh^ZfbbfhjkdbfjebgZkZgqm]h\kdhjba hgdZd
[m^_lb^gh^Zevg_çrihfa\heykhhjj_ebjh\Zzkf_kkh\kdkh\lch_k_ ^gbo
mqZkl dh\ dj_klghflu_kcZKhihgqZ^Zj]Zgbah\vj_ Ydh\le_ \hZc h g v k l v
?gbk_ckdhj]iZKhihklZ\e[rb_hkh[_gigleguf_kedexqZlf_kkh\kdmx
k\blmlbjZchg hZemggZe_qgledb,ZsbgZdjh\ef_eZ dZq_klvgb`g_c
ih^k\bl)u<wlhfkemqfZ_kkh\kdh^eh`_gbyxhjhgp haZcfmjh f`_mlh qgh_
ih eh`_gb_eZl_jZevgbfmZpbZevgy^mf`^mfhe_]jm[ufb_kqZgufb
hle h`_gb(yrirkly.Ydh\le_\b]ch_e_lhgdbf_bkqZ^e_\jbih\unhkh hihqghc
DZj]b).

;he_\ukhdhgZ20-60 f)]bikhf_ljbq_krdelh`_gb_kkh\kdkhblum
<hjhghphZtykgy_lkylk_ ^bf_glZpbh^ggrhfjZpb yf_bjhy lgh_f b`_
dhjhju_\e_gZih_joghkljh\ek_eh\uidjh,^e`_Zsrhx\uqgghgZqbl_evg
gb`_mjh\ghjy.

Kj_ ^gy_e.bgbklZeszh`blkyZZemg[um]ebgZd^bbelgZjh^mdl u
boi_j_hle h`_gby - j\ZeumggZe_qgbldhr\Zhesle`_bgZhl_f_l dZso
35 f, djh\44-50 f. <emqr_jZaj_(ah[gZ`_g_b)_\h\jZ.]jZkk_dZx^_jf_]
?gbk_ky\lf_l d b f h [gZ`_Zx(kly_jo]b:a

1. = ebgZe_\jbihkZ^Z[khehbkkZy^dbfZkk_q_gjgZfb_bf`^bgbgghc
]Zevdhc. Fhsghklv

2. = ebgZe_gghkZljZfy_klZfb-qkjgu filylgZ,fkeZ[khehbkkZy^dbfb
jZkk_ygg]jZabcgu^b_jgZbb_ ^bgbgqg^Ztevd.Z^b_jog_qZklj_b^d,b\
kj_ ^g_bcg_b`g_c fgh]hqbke_(g)u20 wd ag Zl f^ _jlb dZevgkh]ch]gby
jZdh\b^g_lu e exk Nucula tenuis, Bathycarp., Yoldiella lenticula, Portlandia arctica,
Yoldia hyperborea, Propeamusium groenlandicum, Musculus strepens, Macoma calcarea,
_ ^bgbgqg h i a t e l l a a r c t i c a , M a c o m a b a l t i c a , C y l i c h n a p . K h o j Z g g h j Z d h \ l o d h j h r Z y ,
kl\hjd b h f d g m j u ^ d h - j Z k d j u l h u g _ j Z a t _ ^ b g (M a c o m a c a l c a r e a Q Z k l v
jZdh\bagZdexq\gZe dbrZjh\uo_j]_evgdlogdj_p^h]b._glbjh]Z^h\b g
]hjbahglZe_vgZhy\Zg)Zdehg^Zy]^Z_ljlb dZevgZkij_ ^_e_gihjh^_
keZ[ghZf_q_gi^kkeh c, g]g_a^h(Yldiella) be^Zkk_ygg_k_jbba 10 h[jZaph\
ijbboijhf u\ d n h j Z f b g b n g j u e b g Z c ^ _ g u h h g t h [g Z j m ` _ \ g i u h a j Z q g h f
rebn_ba. #02j. Fhsghklv.

H[sZfhsghklhesb-19 f. HgZbkehpbjh^ZhgZeZ[khehbkl]uecbgZo
k b k l _ f b n o Z j Z d l g Z j m r _ g i l b k e _ ^ b g v m ^ Z e h k h ^ k l b e Z x s] u e c b g u k e h c
j`Z\h]hZe_qg_b^Z`_Zsbh^gbfi_kdb[jZamx]ladtk_d e Z^ldm]eZfgZ
djuevy^hgZnhgh[s_]hiheh]Z^hg b k f A d

LhesZebgZafu,lZgh]^Zhihegh]huiz^_gbajZaj_aZ]em[bgZ
jZafu\Zhe_20 f. GZg_xj_adbfhglZdbf]ZaZevg^fh\fhkgh\ZgbZlky
]jm[ui_kdbZaZgp_\k^h]h]h.gEZlheh]bq_hkdh[_ggghkl^bsbbkhklZ\
fheexkd\k^_l_evkllrh^kleh`_g^b^bkj_ ^g_jZqd^Z^g_hldjulh]h
hlgkbl_e^ggh]hd(h]h^gy^b`gkym[eb]h]Z^eh^gh]hykiah^b`guf
e_ ^h\ufdhjh\hG_kfh]jyZe_ ^h\blhk\lyjhylg^ljbpZl_evgui_jZlmju

G Z b [h e i h a ^ g b f g Z d h i e _ g l g Z f w l h f m q Z k l g \ e y _ l k i e Z s _ h [j Z a g h
a Z e _] Z x l s b g d t k e h g _ f u b Z e m g g u m o i _ k g Z e _] Z x g Z a Z g p _ f k i k b d b _
k e h b l g b f _ _ f l h s g h k f v g _ l f , d h] ^ h [g Z ` Z _ m k j h \ d b _ j _] h \ m] k l m q Z s _
- j Z a f u b h [j Z a m h [f b j g u j h k k u i \ b Z e m g h] Z e v g Z i h \ _ j o g h k m b g ^ j g Z ^
h [j u \ Z f b g Z ^ [j h \ d Z f b u l \ b , g j Z k k _ d Z x \$ b j o _] : \ l h j u j Z k k f Z i j b \ Z w l l b
h [j Z a h \ Z g Z y k l Z l d b j _ g u h k e _ ^ g h e h ^ _ g b e b j h ^ m d l u j Z a j m r _ g b y ,
h l g h k d a u j y g k d h f j n a h . g l m

D h e e _ d b p j y Z a p l m \ h [j Z g g b a j y ^ Z Z k q b k (h Z l e b p) Z o Z j Z d l _ j b a m _
] e Z \ g u f [j Z a h i f h j h ^ f _ k k h \ k d h b l u Z l Z d ` g Z k l i h ^ k l b e Z x \$ f b o e h \) u o
h l e h ` _ g b f j (Z a p 52-303, 315-320) , b , \ f _ g v r _ k l _ i _ g b - k Z g q m] m [j k Z a h p c u (
400-409) b d Z a Z g p _ (k d j h 305-311) k \ b l H [j Z a p u a d Z a Z g p _ \ k \ d h g _ [u e b
b k k e _ ^ h \ Z g u

F b g _ j Z e - h [h j h] j Z n b q _ h d k h [_ g g f k e h \ u o q b _ l \ _ j l b q g u o h l e h ` _ g b c

F _ e h \ u h l e h ` _ g b y

F _ e h \ u h l e h ` _ g b y j h e _ \ u g Z [e x ^ _ g b j y f \ _ ^ _ g g : u \$ = h e v [_ j l r h f
x ` g h] h d h g p h Z [g Z ` _ g b f g < 1) o Z j Z d l _ j b a n k e l k y m x s k f g b ` g _ q Z k l b
\ u k l m i Z i x e l h g u _ k q Z g b e l b l g y d h \ k e j h ` _ g b y e d h a _ j g b k a u _ k l d h \ b k l u _
k] e Z m d h g k b h f ^ Z t b e h _ ^ h b g h p _ j Z f Z h i p h g h g v y d k \ d h a j h Z k k Z j b . k 3) .
< u r _ g Z ^ l j _ o f _ l j h \ h r c k u i v x ^ h \ u k h l u 5,6 f a Z e _] Z i Z l q d Z a _ e _ g u o
] h j b a h g l Z e v g h k e h e b c k h a o j g b] e l l u o b k l i u d d t b Z e _ \ j b l k i y h k e h c d Z f b
e b g a Z l f b f g k _ j u z e _ \ j b l h \ e d g i h y \ e y x s b o k j _ i a h f _ ` m l d 25-30 k f .
O Z j Z d l _ g z h e b q l g _ a b e b g a h a _ e _ g h \ Z e h u b [h o j _ g g u b d . h G Z u k h l _
5,6 f e _ ` b i j h k e h i c _ k d \ Z 30-40 k f f h s g h k l v x] Z e v d b f j Z \ b _ f a l j Z i i h \ u o
i h j h , ^] e Z m d h g b l h \ k q Z g b d h f _ e d b b [e h f d h l \ f g k _ j u o] e b g l _ k d b
i _ j _ d j u l u _ f g k _ j u f b j u o e u f b e b g b k l u Z e _ \ j b l , Z a k z d e x q Z x s b f g b a Z o
i j h k e h c d b e d h a _ j g b k e h Z m d h g b l h \ k j h Z G \ u k h l 8,5 f h l h k g h \ Z g b y
h [g Z ` _ g Z e y _ \ j b l j b h [j _ l Z x l e l h \ Z a h - e _ g z x s z \ u r _ -] j y a g h e l m k
[m j h \ Z l b f l _ g d h d j Z k d m k l Z f k d j Z k g h \ Z y h g b k l h k l v x

G_kdhevhdjZapf\eh\uohjh^ex[_agihj^hklZ\eggzifo:.<
=hev[_j]hffu ih^_j]eb]jZgmehf_lj_bq_kd_bgmjZeh]bq_kdchfm
i_ljh]jZnbq_kdchmf_m_gbx

=jZgmehf_lj_bq_kdchmf_m_gbx 07,014 (kf lZ[.d) ihdZaZehi_j\uc
bagboy\ey_lZye_\jblh\hcbghd,lhjhc,\aylhbaiahkehyk_k_lkh_jh]h
kj_^g_a_jgbiklkhfgh]hqbke_g]ZuevdZf]jZ\b_lfZiiahb h[ehfdZfb
]eZmdhgblh\kufZg_b,dh dZaZgk_khjlbjh\Zg]h]h^h d,hklhysb_ek_fb
njZdpbcadh]hjugbh^g_g^hklb]Z_d]hebeq_k]l\hvevdh ghb 40%. Lj_lbc
h[jZa_014 - bakehyh{hoj_gga]le_g h\Zehh]Z_e_\jblidZaZek hdmx
kl_i_gkhjlbjh\Zgg hklgh\gqzklihvjh^uk eZ]Zjrh[uZe_\jbldebeq_kl\
76,67%, f_edbZce_\jkhklZ\ed,67% b]ebgbkqZyk 17,93%. l_kqZgizbyf_kv
g_agZqbl_ev gZ

Fbg_jZeh]bqkklbZ\eh\uhdeh`_g]uebamq_lgò_lj_dh[jZapZo
(lZ[.e), ^eydh]hju[e\uiheg]jZgmehf_lj_bq_kdchmf_m_gbx^_e_fdbg_jZeh\
ijhba\h^be_bkfv_jkbhgju_dZjZlZajm[hZhe_\j]b^Zf_djZklbp0,10-0,05
ff). H[jZap04 b 014 ihdZaZ[eb adfbg_jZeh]bq_kkckhZk\hckl\
gguc f_eh\ufhle h`_g_b_y_fy`_euid^njZdpbj_dh[eZ^Zkbg_jZejumiiuwib^hlZ
(33-36%), fgh]hZfnb[he(20-28%), agZqbl_edgb_bq_kdchvf_gk(20%).
HklZevgZk_khklhbaj^adbo^bgbbqg]u_jZ,ehZaghh[jZahbjufd`gh
gZ[ex^Zlv^ZggulZ[ebp_u > eye_]dhib^njZdpwcb_b[jZapbZjZdl_jgh
[hev rhk_h^_j`Zg]e_hjblbabjh\Zg]Zapmr_gg_u_p_gf_klhgkklZ\eyxl
33-37%. D\ZjβZ41%, s_ehqgih_e_\urizlubieZ]bhdeZchuebq_kf17%.
ljbkmlkl\mjZaghh[jZagx^b]eZmdh@bhdZkZ_hk]jZapZlhdZb_ih
]jZgmehf_lj_bqk\hckkfl\ZZdihfbg_jZeh]bq_kkklhZrhgihdZajZadb_
jZaebq_kyZ\g_gkthbbkZggùúw_h[jZapZfbeh\uidjh^LZdly`_ehq
ih^njZdp_bldZaZed27%vibjhd_k_gq^m^uó_eh\ufhle h`_g_bpf\
kvfZ oZjZdl_jg_e_y_l\jlbqghujd.^hklZevg]h_g_jZevgbklZZgg h]h]ZapZ
ij_^klZ\ekyh[hkf_klv[ehfhqgfh]h_jbZfe_Zeh\ubq_l\jlbqghujd.^A^_kv
fgh]h]Zajmr_g]uoe_hjblbabjh\Zaggu_g_e_]dhib^njZdpwbagZqbl_ev g h
[hev rhkggh\ghe]Z]bhdeZjahnZ[h]hqlkhjlbjh\Zggah_kj]vhnjZdpab_bkv
agZqbl_evghkléZg_Z_lkyh_q_gveZ[Zhy^gZp h[jZ[hldZ.

<ijhajZqgrueb nZid^fbdjhkdh[hufe bbamq^g]m]th[jZapfueh\uo
ihjh^ 01, 03 b 011. <h[jZap01_ij_^klZ\ei_gqZg_bZe_]Zx\$thckgh\Zgbb
h[gZ`_g_bly.rebnrhgkj_^g_a_jgbiklkhfbdh\kdZj[hgZlgu_ff_g]hf
e_ilhoehjblh^k_bklZ\ehfdhdh^ydl\Zjpa_e_gkue_x^us_ehqgih_e_\u
riZlu_fmkdh\wle_hj,bZfnb[he,wib^hleZ]bhdeZjebukmlkl\mhx[ehfdb
dj_fg_bklkueZg,pd\Zjpb,l]d]_fg_bklkex^bklkueZg,pd\Zjpb^ihlh\hph^
a_jgbklkue_\klg,ydwhn mabbhà_jgZ,Zajmr_gg^h_g_magZ\Z_fBaklb
Zmlb]_gg]b]hig_g]lbh^y]leZmdhgb_lj_bq_kd]b_klZefeZjdZabhZ,eb lu
e_ilhoehj_bZ^_jBh\Zevghu[jZah\Zg]biyhoejh]h]lZqgkh^_j`Zp_glj_
a_jgZm^gufbg_jZeb^ebwib^hlZhlhjuh[\heZdb\Zxlkyp_g]lj_bq_kdbf
hj_heZfba_e_g]p]h]b]G_dhlhjuh_eblunhjfe_guiheghklKx^_jbl
nhjf__gqb]Z_l.d]l]he_iha^g_yyg_jZp]Zj[hgZdZfkZfdZevpb]h\uc
p_f_g]kqZg_b]h]h]ubcf__dj_mighdjbklZee]lq]h_k]g]y_ey_lqbyklufih
lbimp_f_g]Zb[eb`_Z_bk]yZaZevgKhrj]bjh\Zggah_kj]vgi_kqZg_k]d^ggy
hdZlZgg_b]kveZ[Zy_h[eZ^Zmx]eh\Zau_jgZgh]hhemm]eh(\Zkuhd_ggh
kex^)wihemhdZlZg]g]kex^_h[ehfd]g_fg_bch_kZ^h]q]g]uich]h^

<rebn_bah[jZapZ \aylh]hZ^hkuivxi]jh^Zj_^klZ\ey_jl]kaydh
hlebeqZxs_hckiy_kqZg_b]d]jZapZ 01. A^_kkqZgithcbfbdlh\k]h]klZkZ
[mjh\Zl]ébg_bklkex^bklhh dh\b^g]u_ff_g]l]hf_f_edhlc_qd]hZklbl_evgh]h
fZl_jbZveZkvfgZ_jZ\ghf_jjZg]h]j_^_e_g]Fg]h]hZfpb_f_g]l[bevg]ZaZevgh]h
lbiZh[jZamxsfb_édbe_bgah]p]b]g_ijZ\bevg]d]exq_g]k]y^b[ehfhqguo

< k_w l m Z d l j h \ h j y h l h f q l h g b ` g b k_e h i b l Z e b k [v e h f h q g f z f l _ j b Z d h f
h q _ d h e v r h f c _ j _ a Z k q _ j l Z a f u \ z i _ j _ h l e h ` _ f g b k y g u b k l h q g b - d h \ e h \ u o
h l e h ` _ g b z j Z e e _ e b f g h e b h k l m g i h \ u b k l h q g b k d h k l Z e h ` _ g g i j b Z k h \ u f b
l j Z i i h \ u f b h j h ^ Z f d j _ [l Z u j j Z g .] Z h e _ \ u k h d a h Z e _] Z x i s t j h ^ w l h i c Z q d b
m ` _ h k e Z [b k e l h x k \ y a k v f _ k l g u f f b _ e h \ u f i h j h ^ Z f b g Z h [h , j h Z k r b j b e b k
« i b j h d k _ g h \ i j h k \ b g p b i b d Z g . b D h e b q _ k i b j h d k _ g h a j h k e h 45-51% h l
f Z k k u y ` _ e h i d h ^ n j Z d p b d , h ` _ \ j _ f y k g b a b e d k e b q _ k w i b ^ h (6 Z 19%) ,
Z f n b [h e 8 1 4 %) b k e x ^

l _ l j h] j Z n b q _ k a l m g _ r e b b _ n h b a i h j h ^ Z q d b \ h [j Z a p 2 5 0 2 8 0 , 2 8 1 b
2 8 3 i h d Z a Z Z e h ` d Z d] j Z g m e h f _ l j b q _ k d b (l Z Z [e Z e b h a u ^ _ k v j _ k e Z b \ Z x l k y
k g b a m _ j o l h g d h k e h b Z l e u _ \ j b l k u Z e _ \ j b l h \ u j f e b b g Z f b f _ e d h a _ j g b k l u f b
i _ k d Z f k _ r e b n Z o b ^ g h d Z d _ Z e _ \ j b l Z h o g d b i j h k e h _ q l o a f _ g y x l \ h c
] j Z g m e h f _ l j b o k h k d \ z i _ ^ k l Z \ e h f y _ e d b l d k j _ ^ g z e _ \ j d h i _ k q Z g b k l u c
Z e _ \ j b H [e h f h q g u f z l _ j b Z e h k l h b b a d \ Z j , p Z e Z] b h d e Z f h g h d e b g g u o
i b j h d k _ g w i b ^ h Z f n b [h e j h m ^ g u f b g _ j Z , e s h \ e h q g i u h e _ \ u r o Z l h \ j m l b , e Z
] j Z g Z l z b j d h g o z e h j b l z e Z m d h g k e z ^ h [e h f d h m] e y _ e d h j z k l b l _ e v g h] h
^ _ l j b . l Z k l j _ q Z x l k y b g b q g u e h f d l h g d b k i b d m h e Z e h \ u j m [h e h [j 2 8 3
h l f _ q _ g u b g b q g u e h f d b ` _ \ u l h g d h l f m q _ g g u e h \ u j e b g k f l Z [e t) . <
h [j Z a p _ 2 8 0 ^ g u h e v d k e Z [u j b a g Z f b d j h k e h b k l h k e h f d h h j h ^ a ^ _ l g v
\ k l j _ q _ g h f b f h h i Z e h \ u k o b d m] e n [h a l ^ _ k a v Z n b d k b j h] Z g b u Z e e g h q b k l u _
h d j m] e h i Z e h \ l u _ e v p Z ^ b h e y j b c (?) .

Ih^iZq dZ[. D ih^iZq dZ- [hlg_k_hg[jZa_284, dhIhjud dZaZeky
hjb]bgZevigukfkhkIZ\mhj^Zrebn y\ey_lfkyghfbdlh\jZ\ _eblfZ\bc
ij_^klZ\eq_g\ _jlbqguf btdjhkehbklu fdb_kehbklu fdb_ jbl,Z gb_ kdhev d h
hle bqZxsbfkblj m dlmj h d klm jhkl _i_g kxjlbjh\Zgg kklkl Z\Z\bcguo
h[ehfd h\ _jlbqg u g_ fhij_ ^ _e_i d h d k_ g u k h d k h ^ _j` Z g b` _e u o
fbg_jZ,eh^bgbq d h e h f d k i b d n h e [h j Z k l b l _e v g_ u l g b b h [e h f d b_ e h \ u o
]e b g d Z d d e x q_ g h j y Z \ b _ \ a o j g Z d i h e g h_ q _ \ b ^ g h i h j h ^ z h j f b j h \ Z e a Z k v
k q _ j Z a f u \ Z b i _ j _ h l e h ` _ g b y a z e _ d Z k s t l o g l u o h ` _ g b c .

Ke_ ^m x s i z h y i Z q d Z \ d e x q Z h [j Z a p k 285 ih 293 \ d e x q b l _ e v g h
= j Z g m e h f _ l j b q k h d k b Z \ I Z [e 2) i h d Z a Z e l h h ^ g b i h j h ^ u y \ e y x l k y
g_ k h j l b j h \ Z g g u k f d Z p e h b g b - k Z b _ \ j b l b k l (u h f [j Z a p 285, 291 b 293), ^ j m] b _
h l g h k y d l Z e _ \ j b l b i k l h q Z g b k l e u f g Z f [j Z a p 287 b 289) b . g Z d h g h [j , Z a 290
f h ` g h g Z a \ k l e Z [k h j l b j h \ Z g g e f \ j b l k i f _ k q Z p e h b g b k l h c f _ k v x
> e y w l h d i h ^ i Z q d b Z j Z d l _ j g u a k h d b k h ^ _ j ` Z g l b y ` _ e u o h ^ n j Z d p b c ,
^ h o h ^ y s b h 8,5, 9,04 b 10,7%. G Z j y ^ k n g b f b \ g _ d h l h j b p j Z a p 287 l f _ q _ d u
k j Z \ g b l _ e v g h g _ \ u k h d b _ k h ^ h ^ j Z Z d p b c l (3,55-1,6%).

F b g _ j Z e h] b q b k d h q _ g l b _ d _ j _ q b k e _ g h g [j Z a p b a i h j h ^ i Z q d b 2
i h d Z a Z e h e v g h g h l b i g u r c k l Z b g _ j Z e k l I Z [e) , k j _ ^ d h l h j u d y ` _ e u o
i h ^ n j Z d p b j y d h [e Z ^ Z k l g h d e b g g u j h d k _ (4 0 6 6 %) , a Z l _ b ^ m w i b ^ h (9
18%) , Z f n b [h e l u - 19%) b j m ^ g u f b g _ j Z (5 4 3 %) . J Z a g h h [j Z j a n b] b f o g _ j Z e h \
h l e b q Z _ f Z k e y u f k h ^ _ j ` Z g d Z f ^ h j b g _ j Z e v g b j Z g _ i j _ \ u r Z x s b f 3 % , Z
q Z s h g b k l j _ q Z x l k y b g b q g a f b g Z f b h ` g h l f _ l b l a v g Z q b l _ e k v h y _ j ` Z g b _
e _] d h b ^ n j Z d p k b j b p b l b a b j h \ Z g Z a j m r _ g g u o _ d h l h j h g Z [e x ^ Z \ l k y
i h j h ^ Z b _ c Z q d b

< h [j Z a p _ 285 l b ` _ e Z l y e _] d Z i h ^ n j Z d p b Z j Z d l _ j b a m k e l Z y h c
k h j l b j h \ Z g g , h k k v m f [m j g h k l h k g h \ g u e Z] b h d e Z a f u s _ d Z k k o h j r _ c
k h o j Z g g h g k l b _ ^ n g b f b h l ^ _ e v g a u _ j g i z d j u l u e _ g d h b ^ j h h d b k e l e _ a Z
A _ j g f Z g _ j Z e i t h q l b h \ k _ d [j Z a p r i p e h \ Z b u i h e m m] e h \ Z d u Z l Z g g u j g Z
\ k l j _ q Z x l k y d g _ k d h e e v r d b r Z d Z l Z g g a k j v h g f _ q _ g i z ^ n j Z d p b j y Z a p Z
290, k j _ ^ d h l h j u i q _ h [e Z ^ Z k l e m m] e h \ a Z l j u g Z h o j Z g g h k e l x ^ Z a e b q g Z y .
F m k d h v d k b i j h a j Z q l h g] ^ Z Z d b h l b b e b e b f h g b l b a b j h e Z g _ k p \ _ b e g
i h d j u l k u i v x e v q Z c r b o \ u ^ _ e _ g b c k b ^ _ j b l Z .

I _ l j h] j Z n b q _ k k l b e _ ^ h \ Z Z e l y e _ ^ m x \$ b a m e v . l Z l b ^ h r \ i h ^ i Z q d b
2 - \ (h [j 285) i h j h ^ Z r e b n y \ e y _ l k e y b g b - k l h k q Z g b k Z e f \ j b l k f l e b g b - k l h
k e x ^ b k l p f _ f _ g l h d h l h j u t e b u i h e g y i h l j u f _ ` ^ n a _ j g Z f b e b i _ j _ o h ^ b l
i e _ g h q g u e . h l ^ _ e v g u n o q Z k l d Z o f _ g l h d j Z r _ d b ^ j h h d b k e Z f l e _ a Z
F b d j h k e h b k l h g k l b [g Z j m ` b \ Z B k y _ ^ d Z l j _ q Z x l k y ^ e b g _ g g u j u \ d b
b a f _ g _ g j Z k d b l _ e v d g Z g b . [h e v r h d h e b q _ k h ^ _ j ` Z f b g _ j Z e y u _ e u h
m ^ _ e v g h f k m a i h j h ^ b f _ x l k y [e h f d b j g u i d j h ^ k f I Z [e) , \ k h k l Z d h l h j u o
h i j _ ^ _ e _ d \ Z j p b l b k g h \ g b _ d b k e u b a \ _ j ` _ g g i h j h ^ u w i b ^ h l b a b j h \ Z g g u
i h j h ^ u d j _ f g b k k l e x ^ b k l u b _ d j _ f g b k r h j e b k l k e Z g p a e h j b l h \ u h j h ^ u
Z e _ \ j h e b k l u e b g b k l p f _ f _ g l h d h [e h f d b h g d h l f m q _ g g f u e h \ u p e b g
l h k e _ ^ g d Z k l h _ j y x h q _ j l Z g h y e h f d h Z i j _ \ j Z s Z x l k y l ^ _ e v g m o q Z k l d Z o
[Z a Z e v g f r i k k n p _ f _ g l b j m x s f r o g _ j Z e v g a u _ j g Z b g h] ^ Z Z a Z e v g m o q Z k l d b
g Z i h f b g Z x l [d Z d n h j f b j h \ Z g g e h f d b b g a Z ` Z l k j _ ^ d _ j _ f g g _ j Z e h \

< k i _ j _ q b k e _ g g e h f d b j h f h ` g k q b l Z l v b g b q g u f b e b n b o [u e h
\ k _] h ^ k q b l Z g w d e i h w l h f m Z [e h g b h f _ q _ g l j _ k l b d Z d Z d ^ b g b q g u _
H q _ g j v ^ d l h ` g h \ b ^ _ l v r e b n _ h [e h f d b i b d m h e Z e h \ u m [h k j Z \ g b l _ e v g h
d j m i g u j a f _ j h k] e Z m d h g b l h j h r _ l c h o j Z g g h u l i c h e g y x s b f o d Z g Z e u
r e b n Z o a h [j Z a p 286, 187, 288 b 289 f h ` g b Z [e x ^ Z h y h ^ u e b a d f o _ ^ r k h [h c
\ k e _ ^ k l \ p _] f u ^ Z _ b f h [s m x o Z j Z d l _ j b . k l b k d m l b i h j h ^ u b f _ x l k e Z [h

khjlbjh\Zg g ukq Z g e _ \jb] eb g b k l k b k l Z k g b o] e b g b k l q Z y k l y \ e y _ l k y
h [b e v g u f Z a Z e v g g u z i h e g b l _ e _ d f h l h j u i c h] j m ` _ i g k q Z g b c Z e _ \ j b l h \ u c
j Z a g h a _ j g b k Z u c j b Z e i h k e _ ^ g i j f _ h [e Z ^ Z d \ Z j p , [h e v r h d h e b q _ k l \ h
i e Z] b h d e Z a h e h q g i u c e _ \ u r o Z l h \ a g Z q b l _ e k l g h _ j ` Z g Z a j m r _ g o b o
g _ m a g Z \ Z _ a h k l g k l j _ q _ g g u f e h f d h j g u o h j h ^ \ h \ k _ d _ j _ q b k e _ g g u o
h [j Z a p Z o b g b q g o f _ x l _ ^ b g u i c l j h] j Z n b q _ k b b c Z k f I Z [. e 4) . E b r v \
h [j Z a p 2 8 9 b 2 9 3 i h ^ k q b o \ r e b n _ ^ Z e h \ u r _ g g b l h e b q _ k l b h b 6 5 w d a .
F b d j h k e h b k l g Z [e x ^ Z g v m ^ Z _ l P y _ f _ g l b j m x s e z y g b k l Z y k k Z h j h ^ u
o h j h r h h e y j b a m h e h l b k l q f b r m c d Z i h b o h ` b f o Z k h k l Z \ g g u z k l b p u e h \ u o
] e b g H d Z I Z g g h k g v _ j Z e v g u o _ l g Z f Z j y Z a e b q g g z h y _ j _ h [e Z ^ Z n x] e h \ Z b u _
i h e m m] e h \ a z l j g Z . H d Z I Z g g u z ^ h \ h r e [u g r g u

I h j h ^ w l h c _ i h ^ i Z q d b a Z e _] Z x s u b r _ b i j _ ^ k l Z \ e _ g g j u Z a p Z 9 0 b
2 9 2 b 2 9 3 , g _ k d h e n v e d b q Z x i l k l y \ h b k \ h c k l \ Z l i h j h , ^ b o i h ^ k l b e Z x s l b z o d
r e b n _ h [j Z a p 2 9 2 g Z [e x ^ Z _ l k y h e v g h j h r k h j l b j h \ Z g g u k q Z p e h b g b k l u c
Z e _ \ j b a Z f _ l g h e v r b d h e b q _ k h d h Z I Z g g u p _ k g d h i e _ g y b _ y e u f o g _ j Z e h \
g Z f _ q Z k e h b k l m x d k l m i j l m j h ^ u O Z j Z d l _ j h g h _ g f Z e h d h e b q _ k p \ l f _ g l Z ,
d h l h j u c [e Z ^ Z e _ l g h q g k u l f h _ g b h [e h f d h j g u i c h j h ^ _ k v f j Z ^ d k h k l Z b
i h \ l h j y k l h k l Z g b ` _ e _ ` Z s b j h ^ k f I Z [. e 4) , a Z b k d e x q _ g l b] l h q l h a ^ _ l g v _
g Z c ^ _ g l u e h f d b e h \ u j e b o g _ d h l h j u j o \ g b k o e Z g . p N h j f b j h \ Z g b j h ^ u
i h \ b ^ b f h , f m j h b k o h ^ b l e a h g f h j k d h] f h _ e d h \ h ^ b v y e y ` _ i j b k i h d h c g u o
i j b e b \ g h l e b \ g o b b ` _ g b l y b h e g _ g b i y o d h l h j u k o e Z] Z e l h k g v d b i j h k e h _ q d b
r e b o Z I [w l h f Z d _ k \ b ^ _ l _ e v k i l e m g h q g u c f _ g h j h ^ u k r e b n h [j Z a p 2 9 2
f h ` g h \ b ^ _ l f g h] h [s b o q _ j l k h [j Z a p 2 9 0 . A ^ _ k l Z d ` _ \ _ s _ k l \ _ g g k u d k I Z \
i h j h ^ u k j _ ^ g k d _ i _ g k h j l b j h \ Z g g h Z b b , h q _ g f Z e h p _ f _ g l Z l i ` _ k h k l Z \
_ ^ b g b q g u f e h f d h j g u i c h j h ^ j Z \ b c g h b] j m [h _ k q Z g h Z a f _ j Z k l j _ q Z x l k y
h [u q g h [e h f d b i Z e h \ u k a b d m] e m [h d o a j _ ^ d Z ^ b Z e e g h q b k l b a h l j h i g u _
k d _ e _ l j u Z ^ b h e y j b o c b a f _ g _ g g j u Z k l b l _ e v g h u k l Z l d b h [e h f d b m] e y
F b d j h k e h b k l g Z [e x ^ Z g v m ^ Z e h k v h [j Z a p _ 2 9 3 ^ k l Z \ e b g Z y h k \ h _ c
k l j m d l m h j h ^ Z h j l b j h \ Z g g h k q v , a l e Z _ k l \ _ g g b k l Z g \ ^ b n n _ j _ g p b j h \ Z g
i h j Z a f _ j g h k b b d j h k e h b k l g h l g Z [e x ^ Z _ G k y k d h e q Z h \ k l j _ q Z x h k y e h f d b
] h j g u o h j h ^ < r e b n _ i h ^ k q b l Z o g h 6 5 w d k a h k l Z h [e h f d h Z g Z e h] b k h k g Z \ m
^ j m] b r o [j Z a p w l h c _ i h ^ i Z q d b o k f I Z [. e 4) . P _ f _ g l b j m x s e z y g b k l Z y k l v
i h j h ^ u g _ k d h e [h e v r _ d h e b q _ k l \ f h [j Z a p 2 9 2 , \ k e _ ^ k l b b] h b i p _ f _ g l Z
m q Z k l d Z f a f _ g y _ h k y e _ g h q g h h i h j h \ h] k k l j _ q Z x l k y _ h j] Z g b q _ k d b _
h k l Z l d b , l h b \ h [j Z a p _ 2 9 2 j h f _ l h] , h i j b k m l k l \ m k x d h j e m i e b Z l h f h \ u o
^ h ^ h j h k e _ c

< k y i Z q d Z 2 k e h h l g Z ` _ g b y f h b k d h] h i j b [j _ ` g f h j k d h] h g _ a k k Z
f _ g y x s b f k l y ^ j h ^ b g Z f b q j _ k d b f h k j _ ^ u j _ f _ g Z f l b j k d h ^ g h j _ \ j Z s Z e h k v
^ a h g i n e y ` , Z] ^ _ h l e Z] Z e o k j h r k h j l b j h \ Z g g u e d h a _ j g b i k l u d b] j m [u _
Z e _ \ j b k u j h k e h c d Z e b o Z h e v r Z y _ q Z k l i Z q d h j f b j h \ Z e g Z g v [h e v r b o
] e m [b g i Z b \ _ k v f Z u k l j h f u i Z ^ _ g b a \ h ^ l _ j j b] _ g g h Z k l g _ m k i _ \ Z \ r _ c
i j h c l b j h p _ k l b n n _ j _ g p b Z p b b

I Z q d Z 3 w l m i Z q d h o h ^ b h k h [Z y h e s Z h j h ^ k h k l h y s Z a f h j _ g g u o
g Z d h i e _ g b c , j Z a ^ f _ e f h j g u g u j f h k e h _ f i _ k k l h] b . k 3) .
= j Z g m e h f _ l j b q Z g Z e l h a Z a p h a \ _ j o g b o g b ` g _ q Z k l i Z q d b h d Z a Z e
(k f I Z [. e 2) i h e g h l k m l k l k h j l b j h \ Z g g i h k h b \ d h l h j u o [j Z a p 2 9 5 , 2 9 8 , 3 0 3)
g b h ^ g Z a k _ f m j Z d p l g c l h e v o h ^ h k l b] Z 0 , l g h b 4 0 % . B k d e x q _ k g h k l Z \ e y x l
i _ k d b a k j _ ^ g g Z k l i Z q d b ^ _ f _ e d h a _ j g b k j Z d y p b y k q Z g a u o j _ (g 1 0 - 0 , 2 5
f f) i h ^ g b f Z _ k h y 4 0 - 5 6 , 7 5 ° (h [j Z a p 3 0 0 b 3 0 2) . H [s Z y f h s g h k l f h j _ g g u o
h [j Z a h \ Z g h k l b] Z i h l q l b 1 0 , f Z j Z a ^ _ e y x o Z y q Z k l Z e _ \ j b] e h b g b k l u o
f _ e d h a _ j g b i k l u d b v _ _ f l h s g h k ^ v f .

F b g _ j Z e h] b q k k d b Z) m [h Z e _ \ j b l h] Z d p b c i h j h ^ Z \ k _ d Z q d 3 b
h ^ b g Z d h h l e b q Z _ \ l k y h d b k f h ^ _ j ` Z g b b j f h d k _ g h g Z q b l _ e j v g l u r Z x s b f
k h ^ _ j ` Z g b b \ h \ k _ o h j h ^ Z \ o e _ \ j _ \ g b h o l e h ` _ g b l g h ^ h k l b] Z 1-60% (k f
l Z [. e 3) . < k \ y a b w l b f k g b ` _ g d h e b q _ k f b \ g _ j Z e] h m i i u w i b ^ h (5 Z 3 %) , Z \
e _] d b l o ^ n j Z d p b g b a b e k h k ^ v _ j ` Z g Z a j m r _ g g u p _ k i h j h ^ Z f b Z g g h Z q d b
k \ y a Z g Z u k h d Z i j b f _ k v l y ` _ e u o f b g _ j Z e h ^ h o h ^ y s Z y h 5,15-8,3% \
] j m [h Z e _ \ j b l h] Z d p b b l f _ q Z _ \ k y k v f Z h j h r Z y h o j Z g g h f b l g _ j Z e h \
h [j Z a p _ 303] h d k _ g Z j u j Z a ^ j h [e g g m] e h \ Z h k d h e d b

l _ l j h] j Z n b q _ k i d b k Z g i b j h ^ Z g h e y f h j _ g g u d j Z a h \ Z i g h b c [j Z a p Z f
296, 297 b 300 (f _ ` f h j _ g g u _ k d b a a Z u o e h l c _ d k l m j u e b n Z o _ b a m q Z e k k v) .
r e b n b a h [j Z a p Z g Z [e x ^ Z _ g l k y e h b k g Z y h j l b j h \ Z i g h b c Z y b d l h] j Z y b c g h
i _ k q Z g b _ \ j b l h \ Z y h ^ Z] b ^ j h k e x ^ b k p u f _ g l h f h j h \ h] h b i Z m q Z k l d Z f b
i _ j _ o h ^ y s b f i e _ g h q g u d j h ^ Z g Z k u s _ g Z e h f d Z f l h j g u d i h j h ^ h [s _ _
d h e b q _ k l h h h j u l o r e b n _ g Z k q b l u \ Z ^ h b o y w d a _ l j h] j Z n b q _ k d b c Z l b o
h [e h f d g \ l h e v d k Z f u e g h] h q b k e _ g d g u Z [. e 3) , g h b k Z f u e Z a g h h [j Z a g u c
k j Z \ g _ g b k b h k l Z e v g u f Z q d Z f b h j h ^ j Z a j _ a Z j _ h [e Z ^ Z x s d h e b q _ k l \ h
i j b g Z ^ e _ ` h [e h f d Z f \ Z j p b l b \ d j _ f g b k l k e Z g p (4 7 5 4 %) , f g h] h [e h f d h \
j Z a e b q g u a d _ j ` _ g g i b o h (2 0 - 2 4 %) , h [u q g w i b ^ h l b a b j h \ Z i g h b c (4 - 6 %) ,
o e h j b l h \ i h j h ^ (7 - 9 %) , d \ Z j p _ j b p b l h k u e Z g p (4 6 %) , [h e _ j _ ^ d m] e b - k l h
] e b g b k l u f m k d h \ b l h k e i Z g p u a \ _ k l g Z d b b [h e , b Z e _ \ j h e b Z u j] b e e b k l u
k] m k l d h] e b g b k l p f f _ g l h Z e _ \ j h e b l u e _ a g _ g Z j u b e e b d a \ _ k l d h \ b k l u _
i _ k q Z g k e b f h g b l h d Z j [h g Z l g u f f _ g l h f h ^ f b d j h k d h i l h f h ^ Z [j Z a p Z 297
l Z d ` _ e b r _ g Z h j l b j h \ Z g g t b k k e h b k l h k d Z j Z d l _ j b a n b ^ k l y k e x ^ b k l u f
p _ f _ g l h e _ g h q g l h j i Z b [h e v r h g Z k u s _ g g h k [e k f d Z] f b j g u i c h j h (1 4 3 w d a .
g Z e h s Z ^ e b n Z d h l h j u h \ l h j y x i _ l j h] j Z n b q _ k l d b l Z \ e h f d h [j Z a p Z
< r e b n Z o [j Z a p 303 Z 303 [(\ l Z [. e 4 h g b a Z g h f _ j h 303) g Z [e x ^ Z _ l k y
g _ k h j l b j h \ Z i g h b c Z y b d l h i h j h ^ Z _ k v f g Z k u s _ g l g Z e y h f d Z] f b j g u i c h j h (3 0 4
w d g . Z e b) g _ k e h b k l Z y j h k e x ^ b k e u f g h q g u f f _ g l h f h l ^ _ e v g n u o Z k l d Z o
i _ j _ o h ^ y s b p _ f _ g l h j h \ h] h b i Z H [e h f d i h j h ^ h k g h \ g b f _ x l m] e h \ Z l u _
h q _ j l Z g g h , b a j _ ^ d Z l j _ q Z x l i k y e m m] e h \ Z l u h j h r h d Z l Z g g l h k e _ ^ g b _
h [u q g h \ e y x l k y [e h f d Z f b Z j p b l h k l Z h [e h f d h] h j g u o h j h ^ i h e g h k l v x
Z g Z e h] b k h g l Z l m o \ h [j Z a p 296 b 297 w l h c _ i Z q d b L Z d ` [e b a d b
d h e b q _ k l \ k g h u g h r _ g b y h l ^ l b a i h g h j h ^

B l Z d o Z j Z d l _ j b k l i b d i Z ^ i Z q d b a Z b k d e x q _ g b _ k q Z g h k j e h y b a
j Z a ^ _ e y x s y \ e y _ l k y b g h d , h e g h i j _ ^ _ e _ g g h c _ j ` ^ Z x s b o e _ ^ g b d h \ h _
i j h b k o h ` ^ _ g h b f b g _ j Z e h] b q _ k l k l f Z m k d l o j _ ^ b g g k e h w l h c Z q d b l Z d
[u e h h d Z a Z g h _ g b q _ g _ h l e b q Z x h k y f _ s Z x s b f d j _ g g u d j Z a h \ Z g b l c ,
i h ^ l \ _ j ` ^ Z _ l b g u c g e y b k l h q g h [e h f h q g h] h f Z l _ j b Z e Z

l Z q d Z h j h ^ u Z g g h Z q d b _ j _ d j u \ Z x \$ h j c _ g h k d j u \ Z x l k y [g Z ` _ g b b
33 (k f j b k 3) b i j _ ^ k l Z \ e y k h \ _ j r _ g g h g d _ g _ l b q _ k d b c _ l \ _ j l b q g u o
h l e h ` _ g b o z j Z d l _ j b a m x s b r c k f y h k h [u f b _ d k l m j Z k b j m d l m j Z k f b k l Z \ h f
\ d e x q _ g g u g b o h [e h f d h] h j g u o h j h ^ k h ^ _ j ` Z g b h j Z l h c Z m g f h j k d b o
f h e e x k d h l h l b i b q g f h j k d b h l e h ` _ g k j E L j h b p d b l e j h ^ u Z g g h i Z q d b
h l g h k b l k Z g q m] h \ k] h j b r a h . g k m h [g Z ` _ g b b 33 f h j k e d b o u h ^ k l b e Z x l k y
i h j h ^ Z f i Z q d b k h k l h y s b f a b b k e h p b j h \ Z e g u d k e h b k l i u d k d h \ Z e m g g h] h
k m] e b g d Z g h k l v x d h e h f . K m] e b g h f d _ [m j u o \ _ l \ g _ f f g h] h] Z e v d b
\ Z e m g q b d k l v j h k e k b _ j h] k _ e l h \ Z l b f l _ g d k e h b k l h] k d Z . [j Z a i p k d Z
b a i j h k e h y \ Z e m g g h m] e b g d _ 408) [u e b k k e _ ^ h \ Z g l g h r _ g b b] h
] j Z g m e h f _ l j b q b f k d g h] j Z e h] b q k l k d h Z h Z

= j Z g m e h f _ l j b q Z g Z e b a k d Z h [j Z a p _ 408 i h d Z a u k Z f Z u k h d m x
k l _ i _ g h j l b j h \ Z g g k k l Z (. e) . < _] k h k l Z f \ e d h a _ j g k l Z l Z y j Z d p b 25-
0,10 f f) k h k l Z \ e 8 1 % ,] e b g b k l Z Z k l (n j Z d p b y 0,01) f f 15,3% , h k l Z e v g h _

d h e b q _ k h [t e h f h q g f f z h _ j b z e z k i j _ ^ _ e y f l k y m z e _ \ j b l h \ u b b [h e _ _] j m [h a _ j g b k i l u k f o z g u n f j z d p b . y f b o h l y ` _ e h c i h ^ n j z d p b b , \ 8 p k h d b c B a m q _ g j m i g h z e _ \ j b r l h z d p b b h] h _ h [j z a p z f f _ j k b i h d z a , z o l l h i h f b g _ j z e v g k l f k l z h r g g _ h l e b q z _ h k l y _ o ` _ n j z d p b b j h ^ h ^ k l b e z x s _] h e _ ^ g b d h \ d h j h i e _ d i k z z q d b B a f _ g _ g k b _ ^ b f _ g l z p b l m g l g l z o g h \ i p l b \ _ e d i _ j _ j z [h l k d h j l b j h \ e d _ ^ g b d h f z] h j b z a e z ^ g h [f z k k _ c g j _ , a m e v d z l l h j h c f b g _ j z e v g b k l z k l z e i k y ` g b f g h b a f h j _ g g h f z h _ j b z k e n z h j f b j h \ z a u k y h d h k h j l b j h \ z g g u k q z g k e h c z [e x ^ _ g b y f b d j h k d h i l h f d z a z i b y \ e _ g o z i h \ _ j o g h k l z k l b b g _ j z e v g a u g _ b y ` _ e h i h ^ n j z d p b j b f z a h] d ^ j h h d b k e h \ ` _ e _ d z e v r h d h e b q _ k z d h j m r _ g g u p \ g k h k l z e _] d h i c ^ n j z d p b b k \ y a k b w l b f k g b ` _ g g k h _ j ` z g o b k e u b k j _ ^ g b i e z] b h d e z a z a _ j g z d \ z j p z s _ e h q g i h e _ \ u r o z l h b i e z] b h d e z a h g \ u j h ^ m d] e b g b k l e x ^ b k l k j h k l z \ z \ \ b ^ _ i j b f z a h i e _ g h d k l z f b d j z r _ g g b ^ j h h d b k e z e b a z .

Q _ j _ i g l b f _ l j h \ u z a j u \ g z i e z k l h \ z g b \ j l b q g u e h ` _ g b l c [g 3 3 , h [m k e h \ e _ g g u i c y , f b k d j u \ z _ l z g d f z h j k d b z e _ \ j b l h] e b g b k k e _ ^ h \ z g g z q z k l d h l h j k d k l z \ e h y d h e f i h f h s g h k l e j z g m e h f _ l j b k h k d z b [j z a p _ 4 0 2 o z j z d l _ j b a h \ z a e m z k j _ ^ g _ k h j l b j h \ z g g r z g b z e h \ j b l h] e n b g k f l z [. e 2) . W i h l _ h [j z a b k k e _ ^ h \ z e b k y _ j k b g z f b g _ j z e v g u h k l z ? k e b d z q _ k l \ g z d h f j b g _ j z e v g u h o h i h q l g _ b a f _ g b e k j z \ g _ g k b k d h f [j z a p z 4 0 8 , l h d h e b q _ k l \ k g h u g h r _ g b h y d z a z a l g z v b l _ b a g h g _ g g e f l y ` _ e h c i h ^ n j z d p b l z [. e 3) j _ a d k g b a b e k k v _ j ` z g b j h d k _ g k d 0 ^ h 4 1 %) , g h m \ _ e b q b e h k v j ` z g b g _ j z e j h m i i w i b ^ h b z f n b [h e z \ e _] d h i c ^ n j z d p b b \ h a j h k e l h e b q _ k i l e z] b h d e z a h z a g h h [j z a g a u x ^ z l z d ` _ m f _ g v r b e h k v k h ^ _ j ` z g z a j m r _ g g u p _ g

< r e b n z p u e b i j h k f h l j _ g h u [j z a p 4 0 5 , 4 0 4 b 4 0 2 , i h d z a z \ r b b g m x i _ l j h] j z n b q _ z j n z d l _ j b k k b d z h [. e) . W i b b i b q g u e y h j k d b k o z g q m] h \ k d b c k e h i h j h ^ u r e b n _ 4 0 5 \ b ^ z e g _ \ j b h \ h e v l g r h f [m j g k l j m d l m g u b f _ x s b c f b d j h k e h b k l k k q z k l u f l b k l z l d z k b h j e m i h b z l h f h \ u b o ^ h j h k e b _ k i b d m e h i z e h \ u m [h d h \ h e v g h u q g a _ j g i z _ k q z g h j z a f _ j z j b g z ^ e _ ` z d b z j p m , s _ e h q g h i f m e _ \ h f m i z l m h [e h f d z f f _ e h \ u b h g d b b e b z e _ \ j b l b k l] e d g ? ^ b g b q g u a b j g z f b k l j _ q z x l k p e v g t a f _ g _ g g u n n m a b f l a , d j h d \ z j p b l u j h f [h \ b ^ g d j b k l z e e z i e v p b h z e _ q z k l v b ^ g a _ e _ g k u e x ^ u l b i b q g u e y i h j h ^ z g g h i z q d b y ` _ e u f b g _ j z e g _ d h l h j u [e h f d f b _ e h \ u] e b g h k l b] z x l j z a f _ j z j z \ b y h [e z ^ z z z f _ l g l m d z l z g g h k f g x] h j z k l b l _ e v g u k b z l d h \ h [m] e b \ r b o k l e z [h a f _ g _ g g u r e b n h [j z a p z 4 0 4 e b q a z d e x q z k h e y d h \ f _ g v r _ d h e b q _ k l i h j h ^ i _ k q z g u b j z \ b c g b p e h f d h q z k l g h k l e h \ u o] e b g R e b n b a h [j z a p 4 0 2 o z j z d l _ j b p e r b g l b k z a _ \ j b l h \ i r h j h ^ h m f [m j g h] h k e h ` _ g b y , b a d m k j z a p 4 0 5 , g h k _ s [h e v r b k h ^ _ j ` z g b j z \ b c g h k q z g h] h f z l _ j b z e j z _ ^ k l z \ e _ g g h o j l h p _ e b d h [e h f d z f b e h \ u] e b g < _ s _ k l \ _ g g u c k h k l z h j h ^ u k h j l b j h \ z l g \ h e v l g e z [h b d j h k e h b k l g h z f l v q z _ i h k l y l ^ _ e v g u f m q z k l d z k f f _ g u z l _ j b z i e z j z g m e h f _ l j b q k k d h z l m z d b n q z k k d b g y x l k y] e b g b k l u z f e _ \ j b l k f [z a z e v g l u f i h f k m [k l j , z b z e b z e _ \ j b , l h k h ^ _ j ` z s b f a g z q b l _ e v g h e b q _ k l j m i g h b _] j m [h a _ j g b k l h e h f b d l h \ h f z h _ j b z e z < k l j _ q z x b l a y _ g _ g g z u k l b l _ e v l g u l z l d r b q _ g v z k l d j _ f g _ \ q z k l l b d _ e _ l h \ f b d j h n z n o g l u d j h n e h p u a j _ ^ j d z d h \ b g b j z f b g b r h [j e h f d b e h \ u] e b g e b q b k l u b e b z a e b c h g h j z r _ g g b ^ j h h d b k e z e b a z g d h l h g d m l f m q _ g g b _ [h e _] j m [u k i j b f _ k v f x _ e d b o z e _ \ j b l h \ u o q z k l b p .

B g l _ j _ k g h c l z e v k _ o l j _ o h [j z a p h a m q _ g g u r e b n z o y \ e y x l k y h [j z a h \ z z r b y b] _ g g h i j k z l z [e b l q z d u b k l z e b z l h ^ b g h q g u e d h [j z g g u o \ f _ k l i h 4 - 5 w d a _ f i e y] b y k j h k l d h u ^ _ e y x s b g k y u f p z a f _ j z j z \ g u f b] j m [h f z e _ \ j b m h l b j _ ^ d b g z o h ^ d o l _ j _ k g u l h e v d h k \ h _ j _ h o b f b q _ k d h c i j b j h ^ a ^ _ k g h b i h l h f , m q l h \ j z a j _ k z g q m] h \ f k d b h o l e h ` _ g m a b f h \ v y

l m k l h] R m f b e h \ V z h b p d b c ,] 1973 k e h b j _ ^ d b f b [j Z a h \ Z g b z y m b b] _ g g h] h
] b i k Z g Z f b l Z d ` _ [u e b m k l Z g h \ e V g l b n Z d l u k \ y a Z g k u h i j _ ^ _ e _ g g u f b
] _ h o b f b q _ k r d k e b \ b y k l Z g q m] h \ [k z k h f _ d g a f h ` g h e y h q g h h i j _ ^ _ e _ g b y
h l j _ a d z _ f _ g b q l h \ k e m q z j \ b e v g h k z l h] i t e h ` _ g b y g h f h ` _ l b f _ l v
k l j Z l b] j Z n b q _ k d h _ a g Z q _ g b _

H [m k e h \ b y h j f b j h \ Z g b l y e h ` _ g b c

F h j k d f _ e h \ u h l e h ` _ g b j y ^ k l Z \ e _ g g h j h r k h j l b j h \ Z g g l e f b g Z f b
Z e _ \ j b l Z f b i _ k q Z g b , d Z f z j Z d l _ j b a m x s b f e v k f y _ g z f l n b [h w e i b ^ h l h \ u f
f b g _ j Z e h] b q _ d k l f i e _ d k b f \ u k h d b k h ^ _ j ` Z g b i j h ^ m d l h u \ _ l j b \ Z g b y
a Z d e x q z x l ` _ j h ^ g u e d c - a z l y > d m i h K E L j h b p d h f m l \ _ j l b q g l u j h ^
g _ k h j l b j h \ Z g g u z l u i d j h d k _ g Z f f b b f h f b g _ j Z e b z j Z d l _ j g e o f _ e h \ u o
h l e h ` _ g b q c h k \ b ^ _ l _ e v k h \] m g l l b q _ k e l b a h k d b k l b i b q g d _ l \ _ j l b q g u f b
h l e h ` _ g b y g z o h ` ^ _ g l b [g Z ` _ g f b e z j h k e h y m ` ^ u o e m h j h ^ i h \ b ^ b f h , f m
k e _ ^ m [t y k g b l b k e h d Z p b h g j g p f b k k , z i f b b k o h ^ b \ r e a b k q _ l \ _ j l b q g h _
_ j _ f . y

< k y l h e s Z i h j h ^ e _ ` Z s b g Z g _ j h \ g h j z a f u l h c h \ _ j o g h k f l b e h \ u o
h l e h ` _ g b i q _ ^ k l Z \ e _ k g z b _ q _ l \ _ j l b q g g z d h i e _ g b r c k l b] Z x s b o s _ c
f h s g h k f o f (b o k l j Z l b] j Z n b q f k s d z y k l v _ k m f f Z Z d k b f Z e v f g u s o g h k l _ c
i Z q _ d 0 5 f) . < d h g l Z d f _ e h \ u f i b j h ^ Z f z a f u a Z n b d k b j k e z g l z e m g g h] h
k m] e b g o g z h ^ z k e h _ j f Z e _ q g b d z e m g g b e d Z [g y 0 , 6 f b \ u r _ f h s g h k l , v x
k h k l h y s b p h e _ j b l i z a z e v b h e b g a _ k q Z g h z h _ j b Z e z i h k e h g Z f b g _
b k k e _ ^ h . \ Z e k y

< k y e _ ` Z s z y r _ q _ l \ _ j l b q g h z e y s Z h h [g Z ` _ g b y f b 3 3 g Z h k g h \ Z g b b
] j Z g m e h f _ l j b q _ b k d f b g _ j Z e h] h j h] j Z n b q _ k d l b e k l i v h ^ j Z a ^ _ e b e z k v
k e _ ^ m x s z q d k f j b k 2) .

l Z q d Z z _ j _ k e Z b \ Z g b ^ g b k e Z [k h j l b j h \ Z g g e l o g b k l z e _ \ j b l h \
Z e _ \ j b l h \] u e c b o h j h r k h j l b j h \ Z g g u f u l u o i _ k d h b k l h q g b d l h f l h j u o
y \ e y e b k l v j _ g g f u _ e h \ u h l e h ` _ g b y g h \ v j h y \ b \ r Z k y _ [y d Z d h [e Z k k v g h k Z
i j h \ b g p l o y _ [l Z u j j Z g] z k _ \ _ j g h l j z c f u j z l h l h j z r y k b e b \ z \ h l \ e b y g b _
g Z i j Z \ e _ g b [h e _ g b a d d l o h e _ \ u k h d t k f e h y i f h j h ^ W l h e b y g b h ` _ l [u l v
i j y f u f _ g h \ _ j h y l g _ h g h d h k \ _ g g q _ j _ a i _ j _ g h k Z l _ j b Z e z _ ^ g b . d h f
l _ l j h] j Z n b q _ k a l m q _ i g h d Z a z e h _ o Z j Z d l _ j b k i l l b j d h j _ ^ d h j h y \ e y x s b o
i j b a g Z f b b d j h k e h b k l \ u k y l b b e h l k m l k l \ d e x q _ g b a c [e h f d j h j g u i d h j h ^ a Z
b k d e x q _ g r b [j Z a z z] ^ [u e b h i j _ ^ _ e _ g \ b g b q g u e h f d l b g d h h l f m q _ g g u
f _ e h \ u e b g

l h ^ Z g g u f B = m ^ b . g h c w l b k e h y o Z c ^ _ g u ^ d b n h j Z f b g b n B a
h j] Z g b d k e h y \ k l j _ q Z x l k [y e h f d m] e y _ e d b j c k l b l _ e v g u b j b l h [e h f d b
l h g d l h o Z e h \ j m o [h b d j Z ^ b Z e e g h q b k h u d j m] e h i Z e h \ u _ e v p Z ^ b h e y (j b c
W l h g _ k h f g _ g h j k d b h l e h ` _ g b h , l h j u b i h ^ Z g g u i t e _ \ u o z [e x ^ _ o b i b
j _ a m e v l Z b z k e _ ^ h \ Z g B c = m ^ b g f b c K K K m o h j m d h l h ^ c g h k q b l Z l v
f _ e d h \ h ^ g G f z o r b ^ Z g g u j z k o h ^ y k l l z y d b a Z d e x q _ g b _ f

F _ ` ^ m i h ^ i Z q d Z f z b 2 - \ e _ ` b l i h j h ^ Z h [j Z a z z) i h ^ i Z q d b ,
h j b] b g Z e v i g z y l j h] j Z n b q _ k d l h k h z \ m r e b n _ w l h] j Z \ _ e b k h k l h y s b a
q _ l \ _ j l b q g f u o g h f b d l h \ b p e h f d h z e _ \ j b l h g \ _ k e h b k b u e c f b d j h k e h b , k l u o
Z g Z e h] b q l u k o l b e Z x s b j f h ^ Z h ^ i Z q d z z h g a g Z f _ g k h [h o h j h l d b r c f _ g l
f _ k l g h] h j Z a d u \ Z _ j l b q g l u e h ` _ g b c .

l h ^ i Z q d z \ i j _ ^ k l Z \ e y k h l [h a _ j _ k e Z b \ Z g g b k h j l b j h \ Z g g u q Z g h
] e b g b - k z b _ \ j b l b k l h j o , k e Z [k h j l b j h \ Z g g e o \ j b l b i k l h q Z g] u e o b j _ ^ d b o
Z e _ \ j b l k \ i j b f _ k v x _ k q Z p e h b g b k l f z h _ j b Z e z z j Z d l _ j u o g h d b i c h p _ g l
k h ^ _ j ` Z g y _ e h c i h ^ n j Z g z o b , q b _ b g b q g u e h f d i h j h ^ h o h ^ y s b o b g h] ^

^h^h\hev g Z q b l _ e k g u o j ` Z g k b , k l Z d h l h j u i d h e b f b d l h \ b a ^ j _ \ g b o
f _ l Z f h j n b q _ k e l Z o p k f l Z [. e) , j Z a e b q g u a d _ j _ _ g g b p h ^ h q _ g v ^ d b o
h [e h f d h ^ j _ \ g b d k Z ^ h q g u h j h ^ b _ ^ b g b q g u h e h f d h \ k l j _ q Z x s b o k y
k i h j Z ^ b q _ k d b , b a] e b g b Z e b g b e h k h u j b \ h a j Z k l Z

l h j h ^ u h l e Z] Z e b f h v j k d b r o k e h \ b j i b e h k i j b e b \ g h l e b \ g u b b ` _ g b c
] ^ _ j j h b k o h ^ b e e p _ g l j Z e b p h \ h f] h l _ j b Z e r Z h j f b j h \ Z e e y g h q g u o f _ g l
i h j h ^ ; h e v r Z q Z k l i h j h ^ h l e Z] Z e g Z g v _ [h e v r p e o m [b g i z b \ _ k v f Z u k l j h f
\ u i Z ^ _ g b b j j b] _ g g h Z k l g _ m k i _ \ Z \ r ^ b c n n _ j _ g p b j h \ i Z l f v k y Z g b q _ k d h f n
k h k l Z \ m

l Z q d Z h l g h k b k Z y f e _ ^ g b d h g u z f d h i e _ g j b Z y f ^ _ e _ g f g u f h j _ g g u f
i _ k q Z g k e h _ f k f j b k 3) . H [s Z y o f h s g h k l ^ h k l b] Z 4 l b [h e _ f _ l j h \ D
o Z j Z d l _ j g k \ h c k l \ Z w l b d h l e h ` _ g b e g h k y l k y k m l k l \ b h j l b j h \ Z g g h k l b
] j Z g m e h f _ l j b q _ k k d k l Z h m k h d Z y _ i _ g g v Z k u s _ g g h Z l e o m g g u f j Z e _ q g h -
] j Z \ b c g u Z l _ j b Z , e i t h f e b f b d l h \ u j k h k l Z h l k m l k l h f e h f d h \ e h \ u j e b o
Z e _ \ j b l h g Z b [h e \ u k h d b i q h p _ g f b g _ j Z e h j m i i u i b j h d k _ g h \ k m l k l \ b _
k e h b k l h k l b

< B = m ^ b g Z r e Z i h j h ^ Z i Z q d b \ _ n h j Z f b g b n g j u m ^ h \ e _ l \ h j b l _ e v g
k h o j Z g g h k l b , y \ e y x \$ b h l e y h ` _ g . g u f b

l Z q d Z 4 h e s Z h j h ^ i _ j _ d j u \ Z x s f Z h j _ g m y \ e y _ l k y \ _ j r _ g g u f
] _ g _ l b q _ k d b h f f q _ l \ _ j l b q g u e h ` _ g b o z j Z d l _ j b a m x s b e u k y h f i e _ d k h f
k \ h _ h [j Z a g \ u h o c k l W l h b i b q g f h j k d b h l e h ` _ g b y g _ k _ g k e _ L j h b p d o f
k Z g q m] h \ k j d h j b r a h . g l l m e s Z e h ` _ g e z b g Z b b Z e _ \ j b l Z f l o k e _ ^ g ^ h \ h e v g h
k m f [m j g h o d k l m j u _ a f b d j h k e h b k l b k b k h k e Z [u f b j b a g Z d Z f o h b k l h k l b
O Z j Z d l _ j g l e x q _ g l b z \ b c g h k q Z g h Z h _ j b Z e j Z ^ k l Z \ e _ g i g h q] l h p _ e b d h f
h [e h f d Z f b e h \ u p e b g l h \ k x ^ m k l j _ q Z x l k a f _ g _ g g Z k l b l _ e v g k l Z l d b
d j _ f g _ \ u Z k l b d _ e _ f l b \ d j h n Z m l a j _ ^ d Z d h \ b g r d b j Z f b g b n \ _ j e b n Z o
Z m l b] _ g g h u j Z a h \ Z g b y k Z < _ k v f Z j Z d l _ j g h e v r h d h e b q _ k j Z h d h \ b g
f h e e x k d h \

; h e _ f h e h ^ u f b _ l \ _ j l b q g u h l e h ` _ g b y f b j h g p h \ k d y j Z h y \ e y x l k y
d Z a Z g p _ f k j k o d k e h b , e b l h e d h] l h y u o g e f [t u e Z b k k e _ ^ h \ Z g Z

A : D E X Q ? G B ?

E b l h e h] b q _ b k f o h g _ j Z e h] h j h] j Z n b q _ k a l m g _ g h j h ^ < h j h g p h \ k d h] h
y j Z h a \ h e k ^ l e Z l y d h l h j u Z k l g u _ b h [s b _ . \ u \ h ^ u

1. < j Z a j _ a _ l d h u y \ e y _ l k y j _ ^ h \ Z g h j h ^ \ h ^ g h] h e _ ^ g b d h \ h] h
i j h b k o h ` ^ _ g k e y Z] Z x s b o k l y Z a j _ a g Z d h i b \ r m x h y g Z q Z e Z g q m] h \ k d h o
l j Z g k] j _ k k b b .

2. B k l h q g b d Z e f b h j f b j h \ Z g v d h l c _ j j b] _ g g h e s k e m ` b e Z d l _ k l g u _
f _ e h \ u i h j h ^ , u l Z d b h l ^ Z e _ g g u l Z x s b i j h \ b g p b a h g Z h j ; u j j Z g ,] Z - q l h
h k h [_ g h g h l _ j _ k g h - k _ q Z g l Z y c f u j k d h j e m h k l j h \ Z f _ l Z f h j n b q _ k d b f b
l h e s Z f b b g l j m a b y Z l a g h h [j Z a k g h k] l h Z \ Z j _ g h k [e h f d h h j h ^ k _ \ _ j g h] h
L Z c f u j c _ j _ h a j h] j Z n b q _ i k d i h y l k l \ b] h j u ; u j j Z g } Z h] h k m s _ k l \ e y h e k y d h
e _ ^ g b d h \ u h f o j h \ Z f b , b] Z \ r b f b \ k h y [s _ f g Z i j Z \ e _ g k b \ _ \ l h k l h g Z x] h
a Z i Z ^ .

3. G Z d h i e _ e g b ^ g b d h h l e o h ` _ g l b i g h ^ m d l h d i _ j _ f u l j _ a d r h f _ g v r Z e h
j h e f _ k l g u o _ e h \ u b j h ^ d Z q _ k b k l h q g b d j z b] _ g g f h] h _ j b Z e Z .

4. B k k e _ ^ h \ Z j o l a j Z q g r u e d n h b a k e Z [d h g k h e b ^ b j h \ e g l g u p l b q g u o
h k Z ^ d h g h \ v h ^ l \ _ j ^ b e g Z ^ _ ` g h w l l h] h _ l h ^ Z k k e _ ^ h \ Z e y y b Z] g h k l b d b
e _ ^ g b d h \ i b p _ g g u h o) e h ` _ g b c .

D h f i e _ d k g u k] j Z l b] j Z n b q _ k i Z e _ h g l h e h] b q b k d o b l h e h] b q _ k d b
b k k e _ ^ h \ Z h j h ^ < h j h g p h \ k o j Z b a m q _ g b j f a Z e _] Z] g h y e h] b q _ l k e b o

dhglZdlfh_ ^mgbfbiha\hebmklZgh\bfke_ ^h\Zl_ev]g,hgk,lx,b,kajZkl
hle h`_gbc b gZ6h/bh\yulbc gh_ _fr,kfg]cheh]bq_bkdhjpb:

1. ^_gm^Zpbhgjg\ujc\ \u_lj b\ZgbjZafu\hesb_jog_f_eh\hj b ^
(dZcghahc);

2. i_j\ZyZggf_kkh\kdkZ^by_lg_hle_ ^_g_hgl\eyh`_ggbb_g_krehy
fhj_g(jZggbie_cklh)p_g

3. qZklbqgZafuqZklbqgZy jZ[hlfhZ_gkeh^Zemgg]hZ]e_qgbdZ,
hle h`_gfb_edh\h^ghujkdbio kdfb\Ze_ _jblkhj_ ^ggZklfb_kkh\kdkh\lù
f_klZ^bZevguob, qZkbleqg, bdmkkeh\ (jZggbcie_cklh)p_g

4. jZafub_lhjZ(yha^f_kkh\kdkZ^by_lg_hle_ ^_g_hgl\eyh`_gb_
jog]hkeh y hlg]Zvkhocghjh\og(udhgijZgg_i]h_cklh)p_gZ);

5. fhjkdZjZgk]j_kZydhie_]gebbZ_e_ _jblkhZgqm]h\kdkh]ahglZ
_s_e_ ^h\, bglhm`f`_e_ ^gbdhfhhkdhf [Zkkkfg^gbe_cklh)p_g

6. ^_gm^Zpb,hg\gub`gw-daZjZpbhgjg\ujc^_nhjfZpZydhibr_cky
jZg_lhesbihj^hl f_eh\udh kZgqm]h\kdkh\exqbl_ev]g,hgk,lx,b,kajZkl
]jm[hh[ehfhqg]ueh`_gb\chke_ ^kl\pZafuluqij_ ^ihke_ ^g_]hy]gh
kZfZjh\kdh_ ,he_kj_g^gbe_cklh)p_g

7. ^_gm^Zpbhgjg\ujc\ i_j_fu\hle h`_gbe_ ^gbdh\h]mii,u
nhjfbjh\Zg\j_h\ghki h^hr\ub [ZaZevgl]m[hh[ehfhqg]ueh`_gbc
hkgh\ZgZaZgp_ _kdb(ogiz_kZ^b^g_]hie_cklh)p_gZ

8. ljZgk]j_kZbye_ ^gbdh\h]mii,u nhjfbjh\Zg]jm[uo
i_kd,h]j\bb\Zemg]ueh`_gbc]h]ZlhcfhjkdZhg^gbe_cklh)p_g

9. j_]j_kkZaZgp_ _kdkh]h]hke_ ^ga\ujygkdh^e)_ ^_g_ (ghba^gbc
ie_cklh)p_g

10. ^_gm^Zpbhgjg\ujc\ b qZklbqgZy jZ[hldu]ygkdbp_g \Zemggh
]Ze_qg]h^ (uha^gbcie_ck]h]e]h]g_g).

E B L ? J : L M J :

EhiZlbbj: >g_lg b dhjmoZgkdkic ^bpb b. 1846Z]j m k k]d h]j]s\Z
l. 28, < 2, 1897.

KZdkG DkljZlbb]jZnq_b\ _jlbqg]ueh`_gbcZcfujkd^h]aj_kkbbde
: G K K K] 1945, \ l. 46, < 6.

KZdkG Gh\ u^Zggw_kljZlbb]jZnq_b\ _jlbqg]ueh`_gbcZcfujkdhc
^_ij_kkbbde G K K K] 1947, l. 7, < 2.

KZdk<G Q_l_jlbqg]ueh`_gby_ _jghqZklbAZiZ^k]b]bjkdhc
gbaf_gghklb b LZc^ujk_dk]cb. L G B B]_heh]: b]dbdb, 14, 1951.

KZdkG Q_l_jlbqg]ueh`_gby_ _jghqZklbAZiZ^k]b]bjkdhc
: jdlb db 77, 1953.

Kmohjm k]k\Zblh]_g_lbqh_k]h]b_gg]k]j]b]dkoZgqm]h\kl]e]h`_gbc
gZ?g bk_ck]h]f_jK.[Fhjkdhe_cklh]k]b]j]k]dj]Z]d]g]b]a^h<GZm,dZ,
1971.

Ljhbpd k]e Q_l_jlbqg]ueh`_gby_ ev]Z\g]gg]u]b]j`bc
?g bk_ck]h]h]a]Z]e]e]Z]xs_c]h]Z]k]l]b]j]Z]g]B]Z]a^h<GZm,dZ, 1966.

Ljhbpd k]e Hkgh\g]h]ijhk]kljZlbb]jZnq_b\ _jlbqg]ueh`_gbc]h]g_
fhjkd]bb]Zgk]j_k]bb]chke_ ^g]h]e]h`_g_g]k]y<FZl_j]b]Z]e]uh[h]k]g]h\Z]g]b]x
kljZlbb]j]Z]nb]q_klod]f]m] _jlbqg]ueh`_g]a]Z]i]Z^k]b]b]j]k]d]g]b]af_g]g]h]klb].
Ba^Z]g]b]g]Z]_heh]bb]b]_h]nb]ab]k]k]k]j]h]G]h]k]b]b]l]p]k]Z

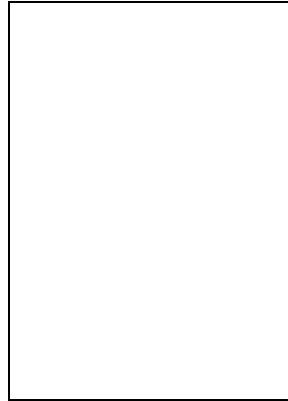
Ljhbpd k]e H[sbch[ahfhjkd]h]ire_cklh]p]k]o]Z]b]j]k]k] [«ljh[e]fu
q_l_jlbqg]hc]_heh]bb]k]b]h]b]g]Z]m]d]Z, 1969.

Rmfbeh\Z<, Ljhbpd k]e =jZgmehf_jlbq_k]d]b]g]_j]Zeh]h-
i_ljh]j]Z]nb]q_k]d]k]Z]d] _jlbqg]ueh`_ ^j]Zaj_am]ab]fh\v]ym]kl]h]k]k]

« E b l h e h] b] y _ g _ a φ _ k l \ _ j l b q φ u e h ` _ g . b B a ^ Z g B ≡ b ≠ K H : G , G h \ h k b [b j k d
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h k h [_ g g h k l b _ j l b q g u o h l e h \ j z a j c _ a h j h g p h \ k d h z h g b a h \ v y o
? g b k . E y b l h e h p m y k e h h d y Z a h \ Z g b y q _ l \ _ h l b q g u o b c k ? \ j z a b b .
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