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Ko Na Lauakau i te Pahefika i Haute

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Ko he fekau fakapitoa ki te Faiaoga

1. Ko te tuhi tenei e mafai ke fakaaoga fakatahi ma je tahi mea e fakaaoga ki te akoakoga o tamaiti e ve ko he hetii ata (slides) lanulanu ma ni pepa e fakatino ai na galuega e maua mai i te:

SPREP (South Pacific Regional Environment Programme)
Box 240
Apia, Western Samoa.

2. E ui lava kua tuhia tenei tuhi i te gagana Igilihi faigofie, kua fakaaoga lava na igoa haienihio na meaola vavevale ke aoga ki na tamaiti e kave e ki latou na matakupu haienihio.
3. Ko na fehili o na lauakau ei loto o le itulau e 37 ma te 38 o te tuhi tenei. Ko na fehili kua fakatulaga i ni vaega e lua, e faigofie te tahi vaega kae faigata malie te tahi vaega.

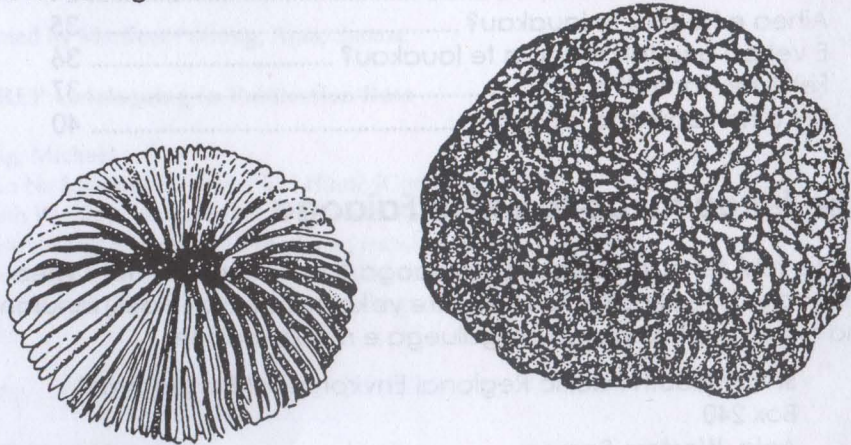
Fakatomuaga

Ko te lauakau ko he vaega e o te hikomiaga e fai ake e te lahi o na meaola ma na lakau e vena foki na akau. E maua mai ai te lahi o na meakai, ma fale ki ei te lahi o na itukaiga mea ola kehekehe i te lahi o na vaega o te lalolagi. Ko na meaola o te lauakau e ve ko te fahua, paka, ula ma na ika ko ni meakai tava ki na tino e nonofo i te Pahefiha.

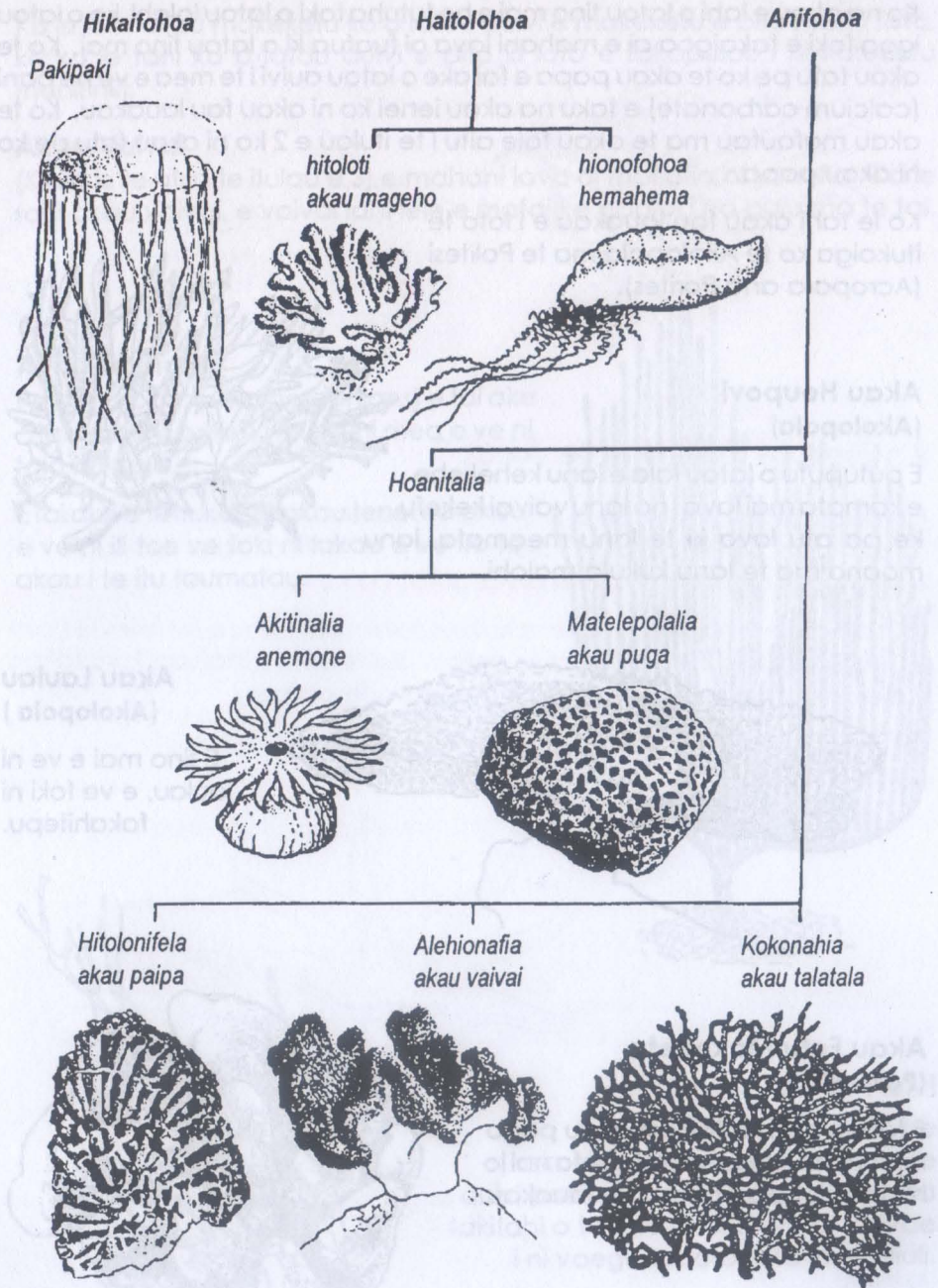
Ko te ofoofogia o na lanu kehekehe, te foliga mai, ma te lahi o na itukaiga akau ma na meaola e nonofo i te lauakau e mafai ke kikila ki ei i ni ata kua haunia e te SPREP. Ko te mafuaga o te tuhi tenei ke mafai ai ke faka-ataata ki tamaiti aoga na akau, te lauakau, ke iloa foki e ki latou na itukaiga akau kehekehe e takalahi.

Itukaiga akau

E faitau helau ia itukaiga akau. Ko na akau uma e fai ake e te lahi o na meaola liliki e taku ni polipe. Ko ie tahi polipe e fuaefa (e 20 cm i te fua fakalapotopoto) e ola tautahi lava ki latou, e ve ko te "akau faleaitu" i lalo o te itu tauvagavale.



Ko ie tahi polipe e taigogole (e 1 cm i te fua fakalapotopoto) e ola fakatahi i he fakaputuga pe tukufakatahiga e ve ko te "akau mafaufau". E mahani e foliga mai e ve ni lakau, kae ko na akau ko ni meaola e o te tai e uiga fakatahi ma te pakipaki, ma te akau vaivai he kaukaiga kua fakaigoa ko te Hinitalia (*Chidaria*) teia e fakatulaga mai i te itulau tenei e hohoko mai.

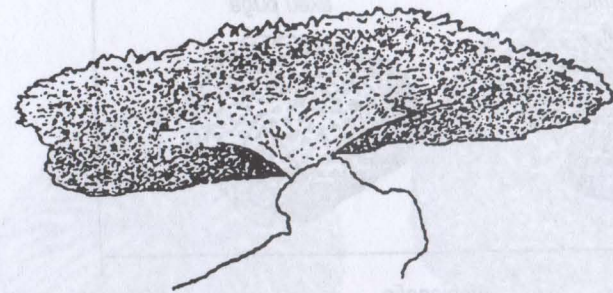


Ko na akau e lahi o latou tino mai e he tutuha foki o latou lalahi, ko o latou igoa foki e fakaigoa ai e mahani lava oi fuafua ki o latou tino mai. Ko te akau fatu pe ko te akau papa e fai ake o latou auivi i te mea e ve he pani (calcium carbonate) e taku na akau ienei ko ni akau fau lauakau. Ko te akau mafau mau ma te akau fale aitu i te itulau e 2 ko ni akau fatu pe ko ni akau papa.

Ko ie tahi akau fau lauakau e i loto te itukaiga ko te Akolopola ma te Polifesi (Acropora ana Porites).

Akau Heupovi (Akolopola)

E putuputu o latou lala e lanu kehekehe e kamata mailava i na lanu vaivai kekefu ke pa atu lava ki te lanu meamata, lanu moana ma te lanu kukula malohi.

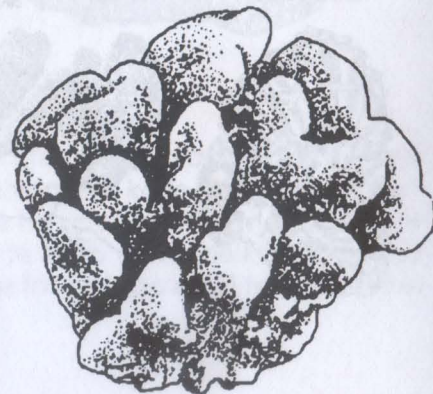


Akau Laulau (Akolopola)

E tino mai e ve ni laulau, e ve foki ni fakahitepu.

Akau Fatu Makeketu (Polifesi)

E fau ake e ki latou na akau pogo lalahi e hili atu to latou fuaefa nailo he tahi itukaiga akau o te lauakau.



Ko ie tahi akau makeketu ko o latou auivi e makeketu e pito mai ki fafo, ka ko ie tahi ko o latou auivi e pito ki loto e fakapulou i ni kafukafu manifinifi.

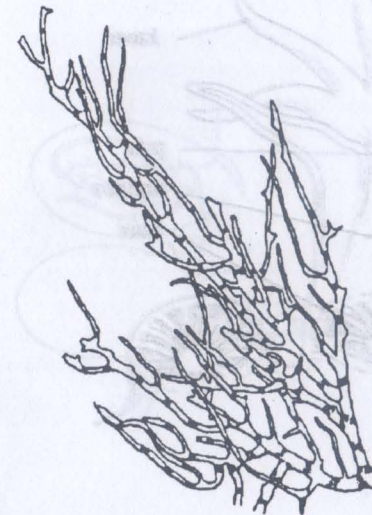
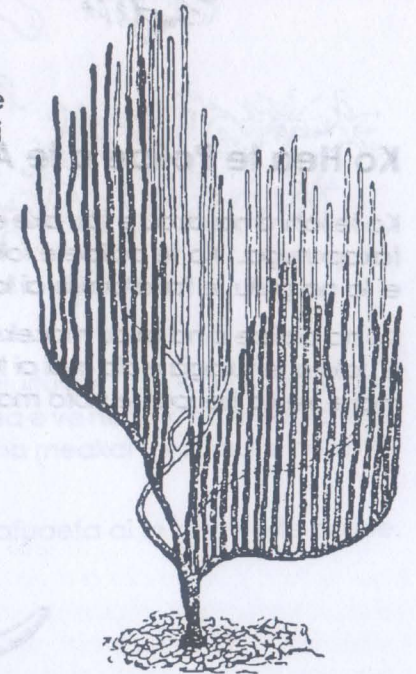
Akau Vaivai

(Kikila ki te ata i te itulau e 3) e mahani lava oi mafafia oi kanofia. Ko ie tahi akau vaivai, e vaivai lahi lele e mafai ke gaioi i na galu ma te tai.

Akau Talatala

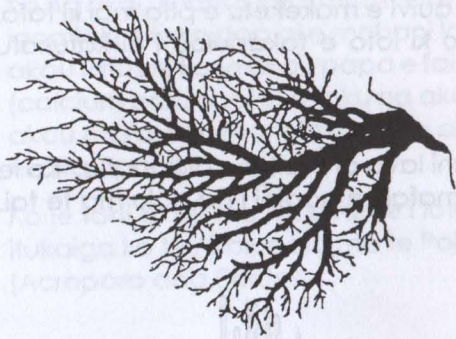
Pe ko ni kokoniana (gorgonians) e fai ake o latou auivi pani e i loto o ni mea e ve ni tala kakaha.

E fai ake e te itukaiga akau tenei na akau e ve ni ili toe ve foki ni lakau e ve ko te akau i te itu taumatau.



Akau Auivi

Ihihi hipulihi (*Islis hippuris*) he kokoniana e felefele toe putui te auivi pani o ia, e i ei foki o na vaega takitahi o te tala e fokotahi e vaevae i ni vaega lapotopoto lanu uliuli.



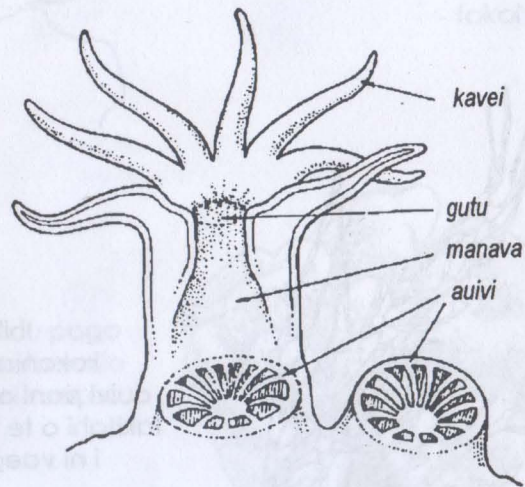
Akau Uliuli

Ko he hoanafoliana (zoantharian) e i ei la na auivi e fai ake i he mea makeketu e taugata lahi kafai e vane oi fakagigila ai. Ko te akau uliuli e he ola fakalagolago ki he tahi akau pe ko he limu. (Kikila ki te iulau e 8 ki he fakamatalaga) ma e mafai ke ola i te moana loloto e he pa atu ki ei na kave o te la.

Ko Hea te Polipe o te Akau?

Ko te lahi o na akau e fau ake e te lahi o na polipe e nonofo fakatahi i ni fakaputuga. Ko te polipe e fokotahi e ve ko te tino mai o he fagaau e i ei la na gutu, e fakatamilo ai la na gutu i na kavei.

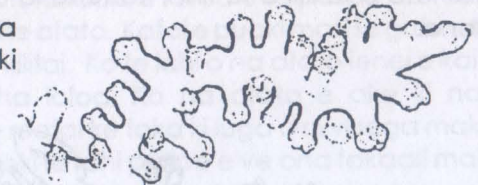
Ko na polipe o na akau makeketu, ko o latou auivi teia e fai ake i te pani e i lalo o te tulaga e ola mai ai te polipe. Ko te auivi e mahani lava foliga mai e ve ko he iputi e nofo ma ola ai i loto te polipe.



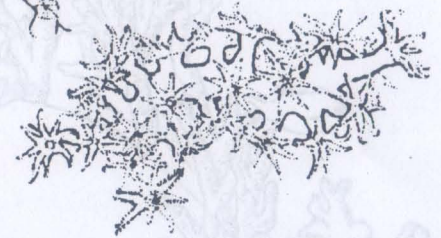
Ko te Polipe o te Akau teia e fakaali atu i te itu taumatau kua tipi lua ke mafai ke katoa ai te auivi i lalo o te tulaga o te polipe. Ko te auivi e heai he polipe e ola ai tena i te itu taumatau.

Kafai e kai i te po te polipe e falolo na kavei o ia ke ao mai ai ana meakai. Kafai e pa ki na ao, pe kafai foki e fakamataku e he tahi meaola oi memeki loa ki loto na kavei o ia ki te tulaga e ve he iputi. Ko he vaega o he akau tenei e fakaali ai te uiga o te polipe.

... **I TE AO** ko te polipe kua memeki uma na tino ki loto o na auivi.

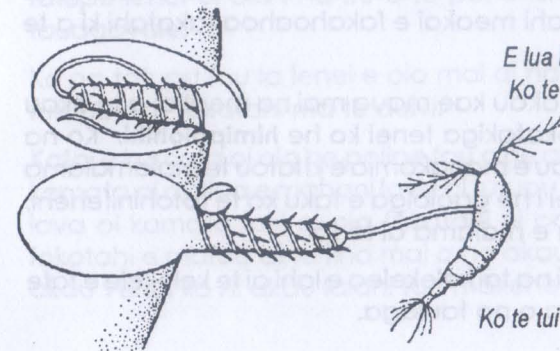


... **I TE PO** kua matala mai te polipe oi kai.



Ko na kavei o te polipe e iei na vaega matuituia e taku ko ni nematohaiti e mafai ke tui atu e ki latou te kona i he mea e ve he tui ki na meaola ienei e fakaigoa ko ni hupalagitone e fai ma ana meakai e kaumai e na kavei ki te gutu.

Ko te ata i te itu tauagavale kua tuhi fakafuaefa ai te kavei o te polipe.

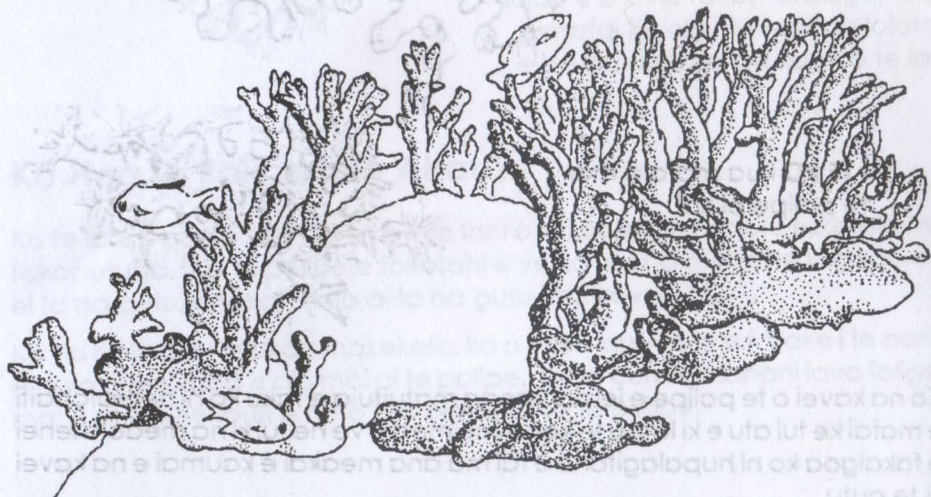


E lua ia tui matuituia o te kavei e fakaali mai. Ko te tui i luga ko heki tuia e ia te kona ki he meaola.

Ko te tui i lalo kua tuia e ia te kona ki te meaola tena e tafea

E he lahi na akau e ve ko te akau mageho (ko ni haitoloti - itulau 3) e iei o latou tui e malolohi e mafai ke lavevea ai na tino.

Kafai e tago he tino ki te **akau mageho** (fakaalii ilalo) e tui e te tui o te akau te kona ki loto o te kili o te tino, ko tena la e mageho pe ve e mu ai te fakalogona.



E he gata e puke mai na meakai e tafefea i te au e na polipe kae e fai foki na meakai e ni hela lakau taigogole (e taku ko ni huhanitotai). Ko na hela lakau ienei e fakaaoga e ki latou te malamalama o te la fakatahi ma na meakai i te tai ke fai ai ie tahi meakai e fakahoahoa fakatahi ki a te ki lava ma te akau.

E malu na hela lakau ienei i te akau kae maua mai na meakai a te akau i na hela ienei. E taku te fehokotakiga tenei ko he **himipaiohihi**. Ko na akau la e ve foki lava ko na lakau e manakomia e ki latou te malamalama o te la ke fai ai na meakai ienei i he gaoioiga e taku ko te fotohinifehehi, e ola foki lava i na kogafenua e malama ai te tai.

E he mafai ke ola lelei na akau i na tai kekelele e lahi ai te kekelele e tafe mai i na vaitafe pe ko te keliga o na taulaga.

E ola Vehea te Lauakau?

Ko na polipe o te akau e mafai ke fananau i ni auala e lua - e iei na fatufakaola (itukaiga tamalooa ma te fafine) pe ola fakatatupu.

I te ola mai o te akau i te fatufakaola e fofoa e te polipe na fua e maua mai ai he meaola e taku ko he afato. Kafai e puaki mai i te gutu o te polipe tenei afato, oi opea ai ki te kilitai. Ko te lahi o na afato ienei e kai e ie tahi ika pe tafefea foki ki vaha loloa. Ko na afato e ake ki na vaega mafanafana toe papaku e mafai ke toka ki luga o ni vaega makeketu oi pipiki foki ki ei oi ola mai ai foki ie tahi polipe e ve ona fakaalii mai i te ata.



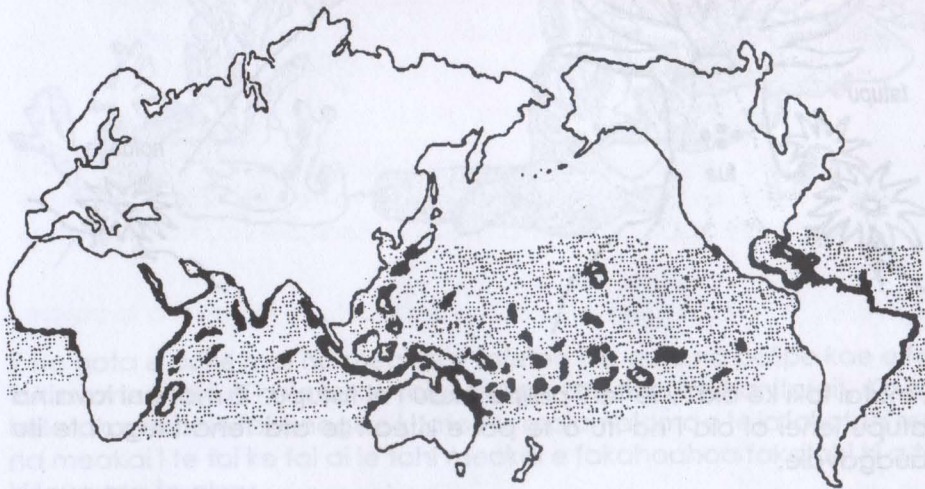
E mafai foki ke ola ni ie tahi polipe akau i ni tatupu. E mahani lava na tatupu ienei oi ola i na itu o te poi e kitea i te ata tena i luga i te itu tauvagavale.

Ko na tatupu fou la ienei e ola mai ai na polipe fou ma kamata foki oi tutupu ake fakatahi ma te auivi.

Kafai e kamata oi ola he polipe fou o he akau e ve ko te akau kolone ma kamata oi matua e mahani lava oi tutupu muamua na tatupu. E mahani lava oi kamata foki oi ola fakatahi ni polipe e lahi i loto o he auivi e fokotahi e mafua ai te tino mai o na akau kehekehe. Ko te lahiga o na akau venei ko ni akau lalahi toe makehetu.

Ka mamate na polipe e mafai ke feola ie tahi polipe i luga o te auivi nae i ei te polipe kua mate. Ko na polipe ola e mahani lava oi pito ki luga ma loto o te kafukafu i loto o te akau e tutupu agai ki luga ma loto i na tupulaga takitahi. Ko te lahiga o na akau mamate ko o latou auivi - ko te kilokalama (kg) e fokotahi o te akau e tuha e ova atu i te 80 000 ia auivi polipe i loto.

E ui lava e lahi ni tauhaga, kae ko na meaola pito taigogole ko na polipe akau, ko ki latou te ki latou faia te lahi o na lauakau lalahi ma te loloa o te lalolagi.



Ko te lau akau e ola oi oti i na tai mafanafana e manino toe papaku. Te ata i luga kua fakaali mai ai na kogafenua o te tai e pa atu to na mafanafana ki te 20 tikeli, fua o te vevela henitikale (ko te kogafenua tena e vali lanu mama) ma na lau akau (vali uliuli malohi) i te lalolagi.

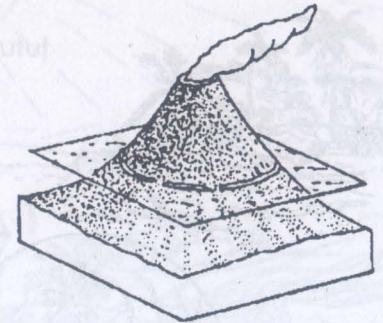
Ko te Pahefika te hili atu te lahi o tona tai i te lalolagi, e lahi atu foki na itukaiga lauakau e maua ai.

Itukaiga Lauakau

E tolu ia itukaiga lauakau, akau tafatafa, akau puipui ma na motu akau.

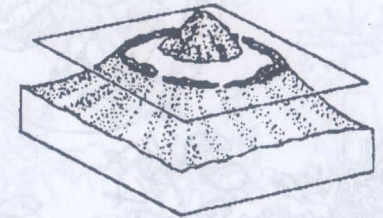
Akau Tafatafa

E ola i te tafatafa o na konitinea ma na fenua. Ko na akau ienei e mahani lava oi ola lelei, e mahani oi gaugau ma ake mai ki gauta i te matafaga kua liu kilikili.



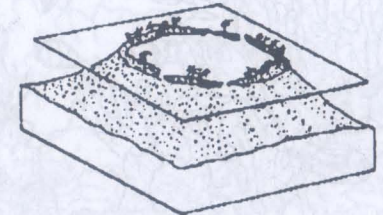
Akau Puipui

E vavae kehe mai te matafaga i he namo e loloto lahi. E ola na akau i te vaega loki o loto i te namo vena foki te itu ki fafo o te akau.



Motu Akau

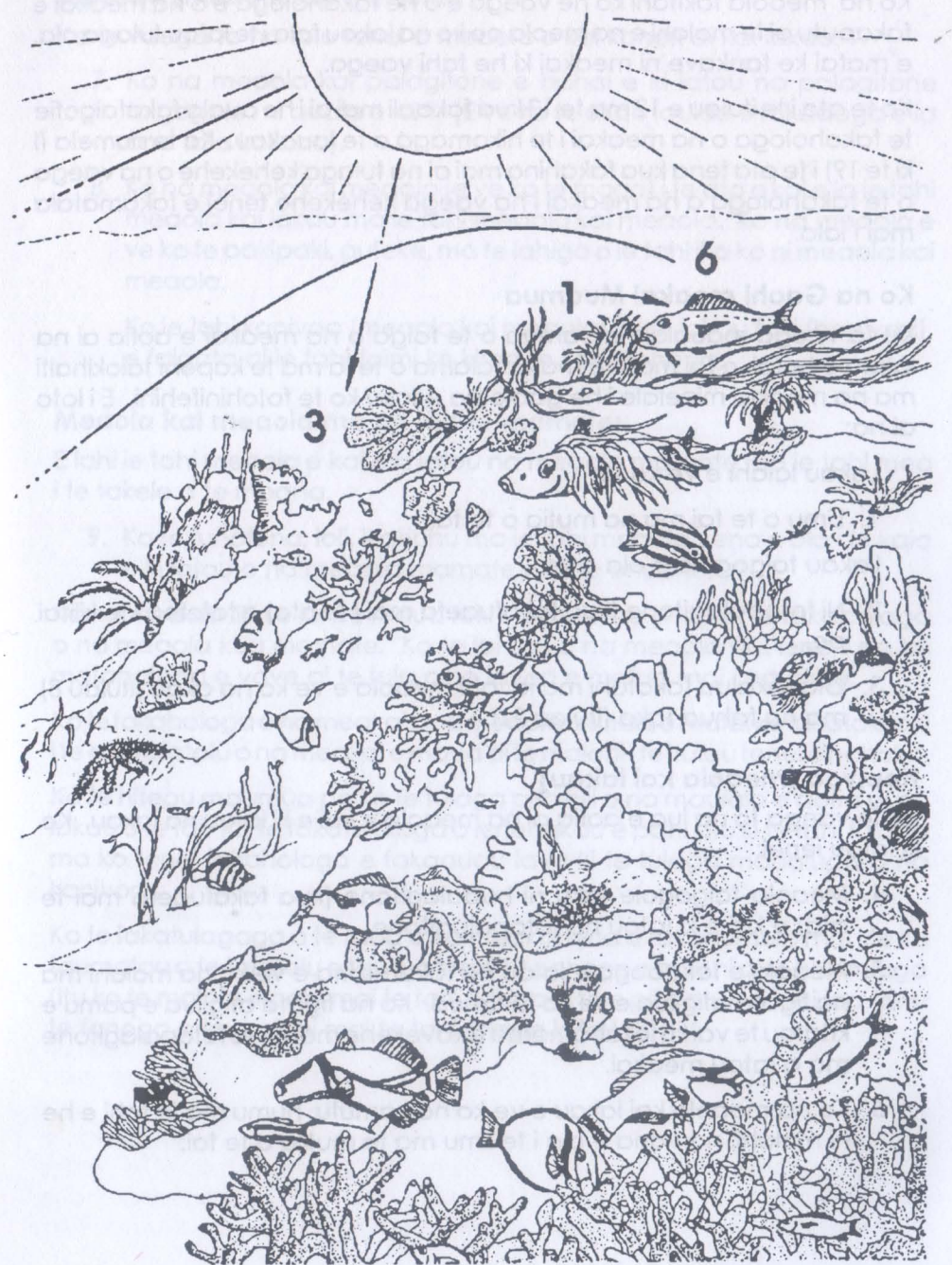
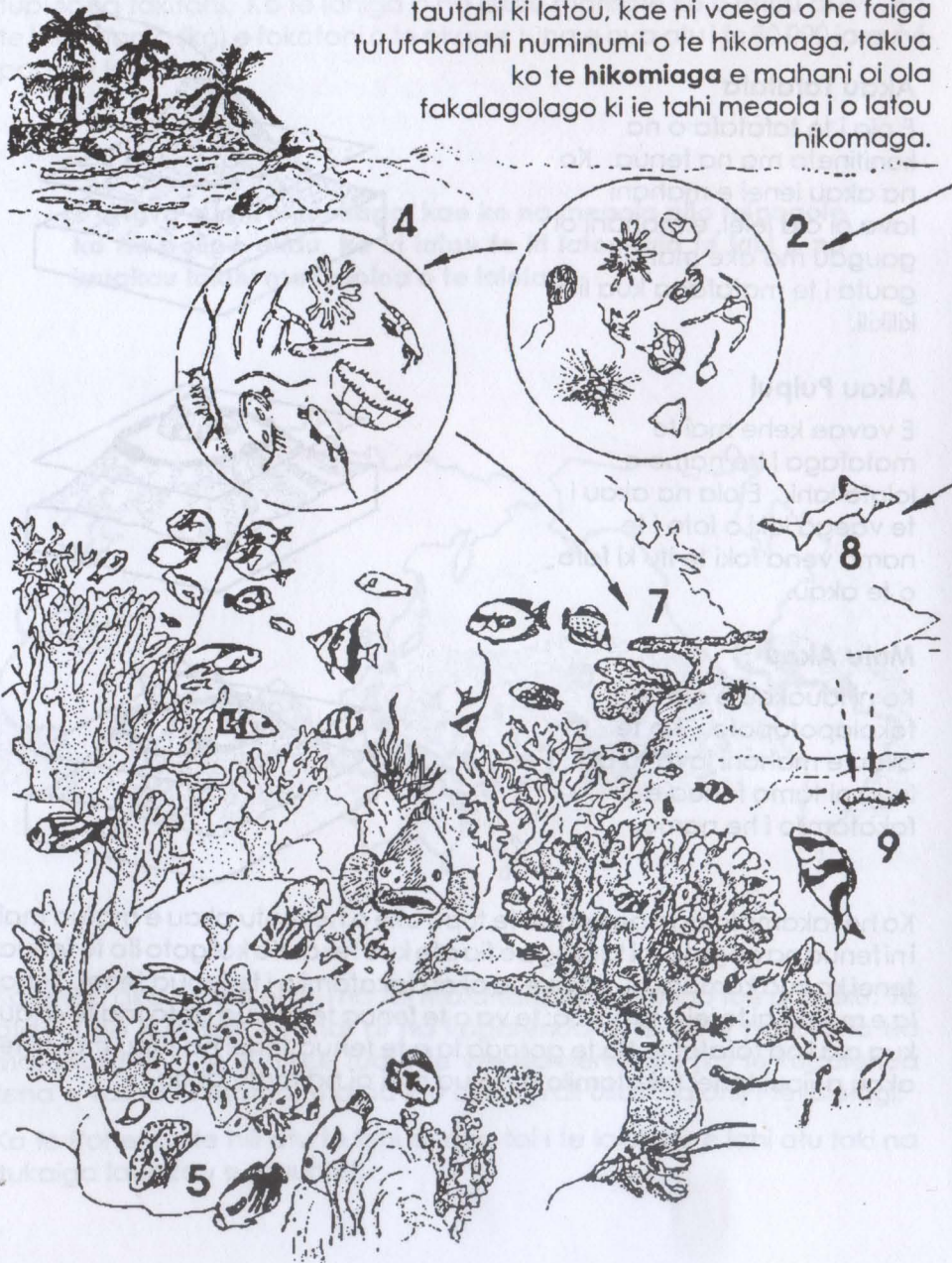
Ko ni lauakau e ola fakalapotopoto. Ko te akau e mahani lava tu ai i luga ni tama fenua e fakatamilo i he namo.



Ko he fakamatalaga pe vehea te tupu ake o he motu akau e mafua mai i ni fenua na gogoto i ni tausaga e fia afe kua teka. Ka koi goto ifo te fenua tenei ka kua kamata oi ola ake te akau fakatamilo i te fenua tenei. Tena la e mafua ai te iei o te namo: te va o te fenua tenei kua goto ma te akau kua ola i na tafatafa. Ko te gotoga la o te fenua tenei na tupu mai ai te akau puipui tenei fakatamilo e maua mai ai na motu akau.

Ko te Hikomaga o te Lauakau

I te natula ko te lahi o na meaola e he feola tautahi ki latou, kae ni vaega o he faiga tutufakatahi numinumi o te hikomaga, takua ko te hikomiaga e mahani oi ola fakalagolago ki ie tahi meaola i o latou hikomaga.



Ko na meaola takitahi ko he vaega e o he fakahologa e o na meakai e fakaputu ai te malohi e na meola pe ko na lakau fola i te latou tulaga ola, e mafai ke taukave ni meakai ki he tahi vaega.

Ko te ata i te itulau e 12 ma te 13 kua fakaali mai ai i he auala fakafaigofie te fakahologa o na meakai i te hikomaga o te lauakau. Ko te numela (I ki te 19) i te ata tena kua fakahino mai ai na tulaga kehekehe o na vaega o te fakahologa a na meakai i na vaega kehekehe tenei e fakamatala mai i lalo.

Ko na Gaohi meakai Muamua

Ko te vaega maualalo muamua o te faiga o na meakai e aofia ai na lakau o te tai, e fai mai i te malamalama o te la ma te kaponi taiokihaiti ma na meakai minelale i he gaoioiga e taku ko te fotohinifehihi. E i loto ai na:

Lakau lalahi e ve ko te:

1. Limu o te tai ma na mutia o te tai.

Lakau taigogole e ola e ve:

2. Ni fotopalagitone (kua fakafuaefa mai i te ata) e tafefea i te killitai pe,
3. Ola tokalua fakatahi ma ie tahi meaola e ve ko na akau (itulau 8) ma na fahua taka (itulau 21).

Hepivoa (meaola kai lakau)

Ko te vaega to na lua e aofia ai na meaola e kai e ki latou na lakau. Ko ki latou ienei:

4. Meaola taigogole taku ni hupalagitone (kua fakafuaefa mai te ata) e kai e ki latou na fotopalagitone.
5. Meaola e fakaaoga e latou na fakamama e ve ko na molahi ma na figota atigilua e ve ko te fahua. Ko na figota atigilua e pamu e ki latou te vai ki he fahamama e kavekehe mai ai na fotopalagitone ma a latou meakai.
6. Ko na meaola kai lakau e ve ko na kamutu, humu ma ie tahi e he ni molahi, na vana e ola i te limu ma te muti'a o te tai.

Kanivoa (Meaola kai meaola)

Ko te vaega to na tolu tenei o meaola e kai kanofi oi kai lakau.

7. Ko na meaola kai palagitone e hahai e ki latou na palagitone taigogole i ni auala e lahi. (E ve ko te akau laulau e fakaaoga e ia ona tala kokona).
8. Ko na meaola kai meaola (e ve ko te mago) i te ata e kai e ia ie tahi meaola kai lakau ma ie tahi meaola kai meaola. Ko na meaola e ve ko te pakipaki, gufeke, ma te lahiga o ie tahi ika ko ni meaola kai meaola.

Ko ie tahi kanivoa (meaola kai meaola) e kai lakau foki (hepivoa), e faigata ai ie tahi taimi ke kitea te kehekehega.

Meaola kai meaola ma na lakau mamate:

E lahi ie tahi meaola e kai e ki latou na meaola mamate ma ie tahi mea i te takele o te moana.

9. Ko te funafuna, loli, ikahuhu ma ie tahi meaola vena e ola i te kaia e ki latou o na meaola mamate mai te oneone.

Ko na meaola liliki e lahi e maua foki i te lauakau e taua i te fakapalaga o na meaola kua mamate. Ko te lahiga o na meaola liliki ienei i na tai mafanafana e vave ai te fula o he lavea e mafua mai i na akau.

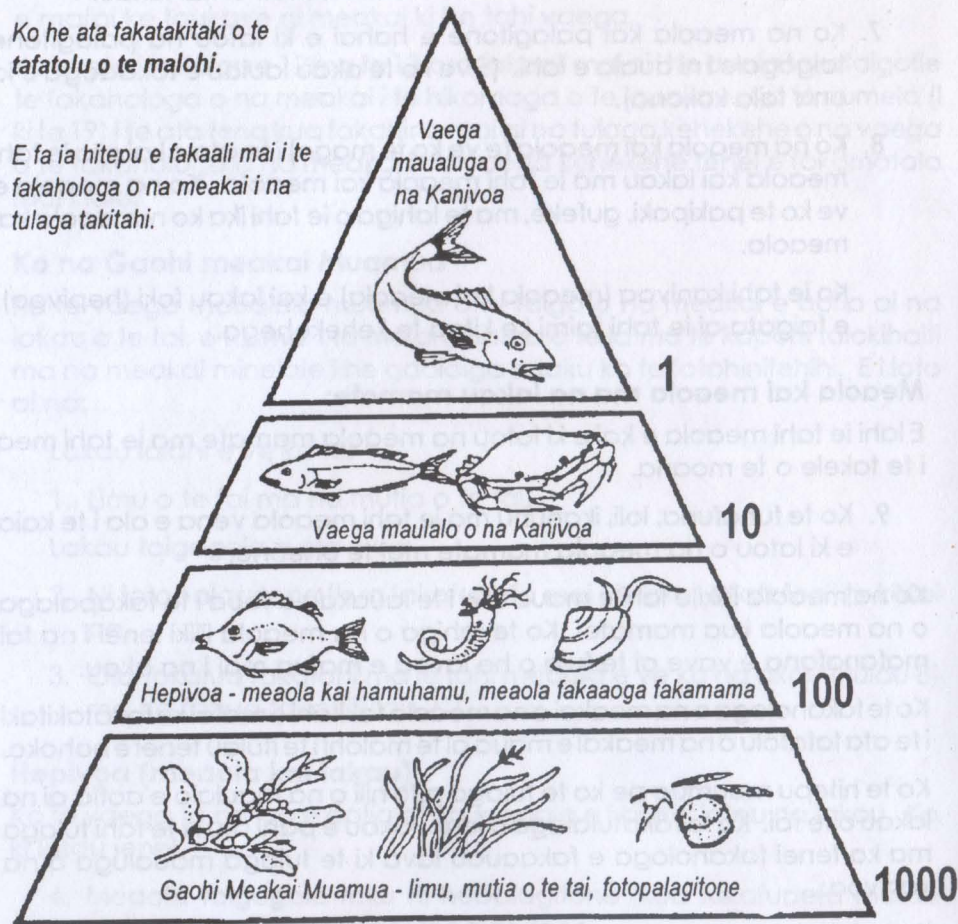
Ko te fakahologa o na meakai a na meaola takitahi e mafai ke fakatakitaki i te ata tafatolu o na meakai e maua ai te malohi i te itulau tenei e hohoko.

Ko te hitepu maumua pe ko te tulaga pito hili o na maualalo e aofia ai na lakau o te tai. Ko te fakatulalaga o ienei lakau e pahia atu ki te tahi tulaga ma ko tenei fakahologa e fakaaauu lava ki te tulaga maualuga o na kanivoa.

Ko te fakatulagaga o te taua o na meakai iena e fakanumela mai i te itu taumatau o te tafatolu e tau fuafua e 10 pahene e paleni ai te hikomiaga (itu ko te malohi e pahia mai te tahi tulaga ki te e pito atu). E he i loa tonu te fanoga o te malohi mai te tahi tulaga ki te tahi.

Ko he ata fakatakitaki o te tafatolu o te malohi.

E fa ia hitepu e fakaali mai i te fakahologa o na meakai i na tulaga takitahi.



Matau lelei ko na hitepu takitahi e iei lava te vaega o te malohi e maua mai i na meakai e fakaaoga e na meaola takitahi. E fakaaoga e na meaola ienei te lahiga o te malohi ke fakagaoioi ai o latou tino. Ko tona uiga ko na hitepu i luga e gaholo e taigole te vaega o te meakai e fakaaouu atu ki loto. Ko tona uiga ko na hitepu pito ki luga e he mafai ke lahi na meaola ienei ma lahi ho latou numela. E fakatuhatuha e fokotahi te tone o na lakau e mafai ke maua ai he kilokalama kanofi - ika e fokotahi o na ika e ve ko te ono.

Kuluhetahione (Crustaceans)

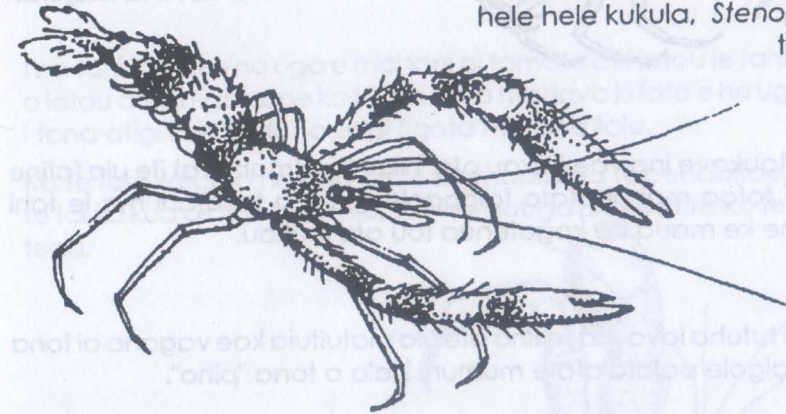
Ko na kuluhetahione (aofia ai na ulavai, ulatia, paka) e ve foki lava ko he vaega o na iniheti i te kelekele. Ko o latou lima ma na vae e hokohoko i ni hokoga. E iei o latou auivi e pito mai ki fafo e ve ko ni atigi makeketu.

Ke ola, ko na kuluhetahione e unu o latou atigi i ni vaitaimi patino, ko te gaoioiga tenei e tatake ai e na meaola ienei o latou atigi tuai. Kafai la ka unu e vave lele te tupu fuaefa o te meaola ka ko heki makeketu tona atigi fou. To latou tahi uiga ko te "tiaki" o he vae kae ke mafai ai ke hola. E toe ai la he tahi vae fou ke hui ai.

Ulavai ma na Ulatai

E lahi na itukaiga ulatai e nonofo i loto o na lotolotoga i te lauakau.

Ko hetahi ulatai manaia ko te ulatai hele hele kukula, *Stenopus hispidus* tenei ite ata.

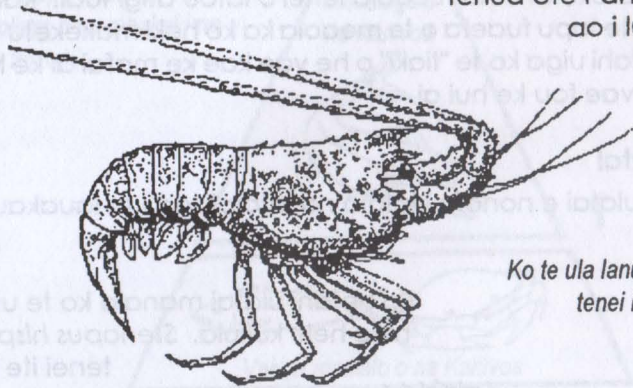


Ko ie tahi ulatai e fakaaoga ko te ula tai pakeke pe ko te ula tai - fana aua e mafai e ia oi o 10010 fakapakeke ona vae fua. E mafai ke lagona kafai koe e havalii luga o te akau i na po.

Ula Matuituia

Ko te lahiga lava o na itukaiga ula matuituia e nonofo i loto o na pu e mafai ke fetolofi ki ei oi hakili meakai.

Ko na ula matuituia e maua ina fenua ote Pahefika e tofu ki ei pe ao i luga o akau ina po.



Ko te ula lanulanu, *Panulirus ornatus*, tenei i te ata i te itu tauagavale.

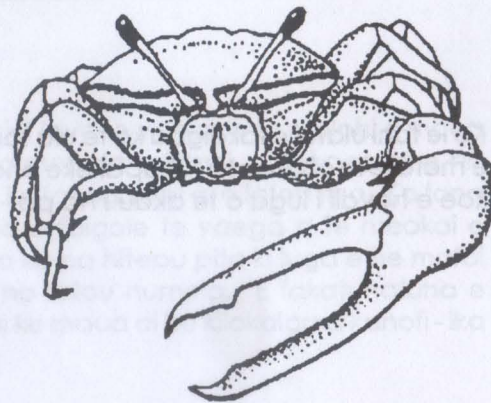
Ko na fua e taukave ina vae kakau ote "hikuhiku" (manava) ite ula fafine matuituia. E fofoa mai ni afato taigogole e tafea fakatahi ma ie tahi hupalagitone ke maua he kogafenua fou ote laukau.

Paka

Ko te paka e tutuha lava ma te tino ote ula matuituia kae vagana ai tona manava e taigole palafalafa e mumuni i lalo o tona "piho".

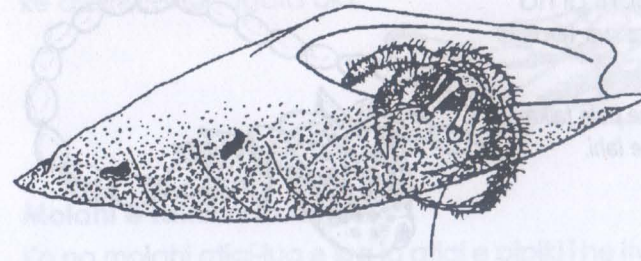
Ko na paka e takilua o latou vaefua ko te tahi e fuaefa i te tahi.

Ko te itukaiga paka, kote ula, i te ata i te itu taumatau e fakaaoga e ia tona vaefua ke fakalalata mai ai na paka fafine kae tuli kehe ai na paka tamaloloa.



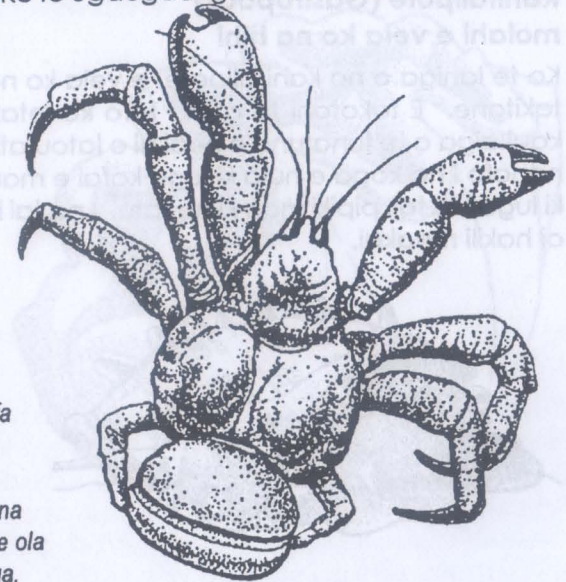
Ko te uga e he ve ko ie tahi paka, e iei tona manava takavaivai. Ke puipui tona manava, e fakaaoga e te uga na atigi figota o na meaola tai ke fai ma ona fale - tena e kitea i te ata.

I te tuputupu mai o te uga e hakili he tahi atigi figota fuaefa ake ke ola ai.



I na tahi taimi ko na uga e mahani oi tamate e ki latou ie tahi meaola mai o latou atiga figota, pe ko te toe tohu mai lava ki fafo e he uga te tahi uga i tona atigi kae fai tona atigi figota ma ona fale.

Ko te tahi kaiga o na uga ko te Koenopaitea (Coenobitae) kua he ola i te tai ka kua ola i te kelekele. Ko te ugauga *Birgus latro* ko te tahi itukaiga tena.



Ko te ugauga i te itu taumatau e fuaefa atu ia i lo he tahi itukaiga uga gauta.

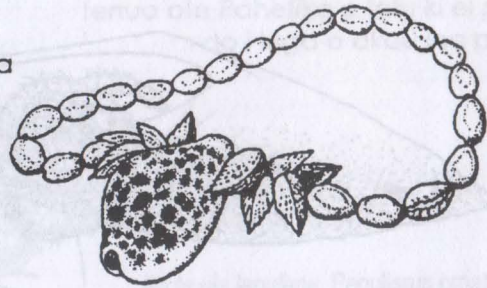
E mafai ke katoa te 4kg te mamafa o na ugauga matutua kua fuaefa atili foki ke ola i loto o ni atigi figota e ve ko ie tahi uga.

Molahi (Molluscs)

Ko na molahi e takavaivai o latou tino ma e lahi na itukaiga e iei o latou atigi makeketu, e veia ko na pule ma na kalea (cones) e maua ina matafaga.

I na motu o te Pahefika ko na atigi e fakaaoga ke gaohi ai na kafilo, lakau muhika ma na teuga teuteu lelei.

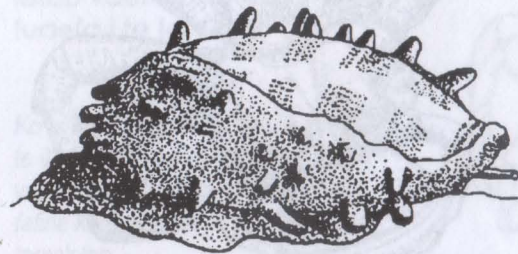
Ko te fau i te ata tenei e hui i he pule taika fuaefa ma na pule mama aulo e lahi.



Ko na fua o na molahi e fofoa ke kavea ma afato taigogole e opeopea ve he vaega o te lahi o te palanitone ka ko heki goto ifo ki te takele ma kavea ai ma meaola matua. Ko na molahi e aofia ai na meaola e veia ni hihi (gastropods), na meaola e atigi - lua ma na meaola e veia ko te gufeke ma te feke (hefalopote).

Kahitalipote (Gastropods) molahi e veia ko na hihi

Ko te lahiga o na kahitalipote, e veia ko na pule ma na kalea, ma na takitone. E fokotahi te atigi i fafo ko ietahi e veia ko na meaola i te kaukaiga o te funafuna e heai ni o latou atigi. E lahi na meaola venei e nonofo i na koga e hula ki luga kafai e mamaha te tai ma, kafai e hula ki luga i te tai, pipiki mau ki na fatu. I na tai hua, e fetolofi ai i loto o te tai oi hakili meakai.

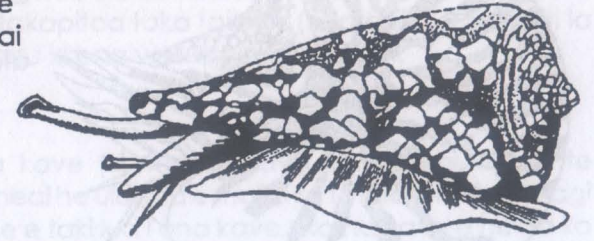


Ko te atigi o te pule i te ata i te itu agavale kua matua gigila.

Kafai te pule e gaioi, ko te atigi e ufiufi e he maho (ve he kafukafu) ke puipuia ai ia ma fakatumau ai tona gigila.

Ko te figota ko te kalea e tapoki e ia na mafua e veia ko na anufe o te tai ma na ika taigogole e ala i te tavelo i tona alelo, e veia ko he tao to na taliga ma na ala e fakatafe atu ai te kona.

Kafai e he taupukea fakateete kona figota o te kaukaiga o te kalea e mafai ke afaina ai ia tagata ola.



Molahi e takilua ia atigi

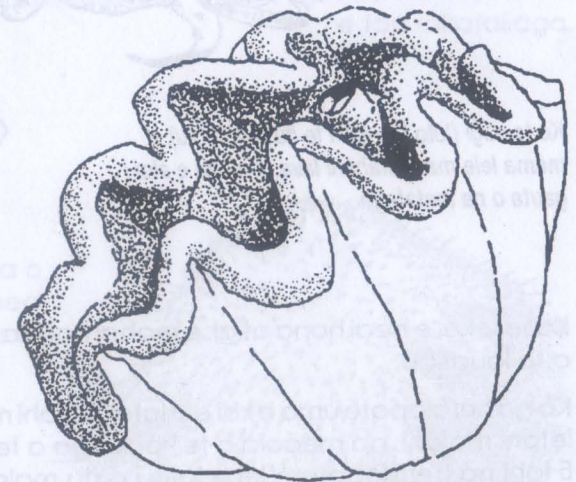
Ko na molahi atigi-lua e lua ia atigi e pipiki i he itu e fokotahi. Ko na atigi, ie ia e tamau e he hoko e fokotahi pe lua e kavea ma malu malohi mai na fili, vagana ai na fili lalahi e mafai ke nuti katoa te atigi, pe ko na tama meaola e tavili atu ni o latou pu i te atigi. Ko na figota e takilua ia atigi e kakai e ala i te fakamama atu o na lakau taigogole e opeopea i te tai.

Ko na fahua taka, (*Tridacna*) ko na figota atigi - lua ia e kitea gofie i luga o na lauakau.

Ko te fahua taka fuaefa atonu e pa tona mamafa ki te 250 kilokalama ma hilia i te helau tauhaga te matua.

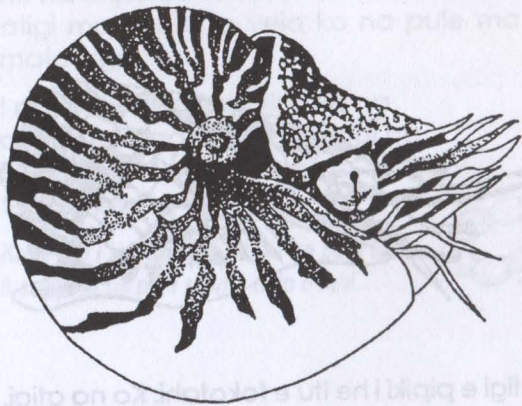
Ko te vaega lanu o te fahua i te ata ko na lau kanofi ia e mahani lava oi lanu malohi.

Ko te lau o te fahua taka e iei na aki (algae) e fakataufehoahoani (e veia ko na polipe) kua mafai ai ke kakai ki te malamalama ma na lakau taigogole e opeopea.



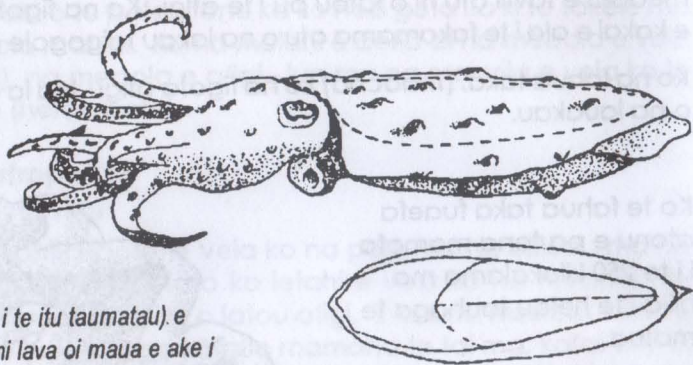
Hefalopote (Cephalopods)

Ko na hefalopote ko ni molahi e fakatamilo o latou kavei io latou ulu.



Oi oti lava te meaola o te kaukaiga tenei e iei o latou atigi i fafo ko te notila e maua i te itu ki hihifo o te Vaha Pahefika.

Ko te gufeke, (ko tona ata ei lalo ifo) e iei tona atigi i loto.



Ko te atigi (loto i te ata i te itu taumatau) e mama lele ma e mahani lava oi maua e ake i gauta o na matafaga.

Ko te feke, e heai hona atigi, e mahani oi maua i lalo o na fatu lalahi i luga o te lauakau.

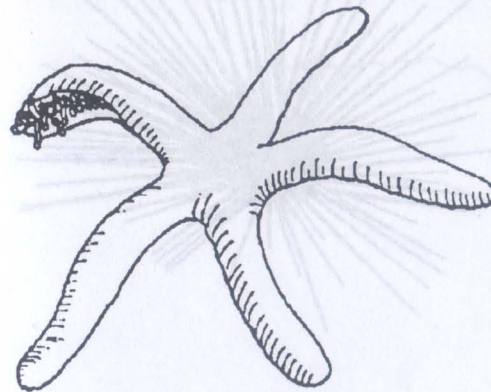
Ko na hefalopote uma e kai e ki latou ie tahi meaola ma e tapoki e ki latou ietahi molahi, na meaola o te kaukaiga a te paka ma te ula, ma na ika. E lahi na hefalopote e iei o latou gutu malolohi e fakaopoopo atu ki o latou alelo e tutu ai foki na nifo e veia ko na kahitalipote (gastropods). Ko na gutu o ie tahi hefalopote e iei na pugo kona e tamate ai ana mafua ma e mafai ke ogohia ai na tino.

Ekinofema (Echinoderms)

Ko na meaola i te kaukaiga tenei e aofia ai na fetu, tuitui ma na meaola e veia ko te loli ma te funafua. Ko te foliga o latou tino e lahi tutuha o na itu uma i te fakalapopotoga e veia ko na kaho o he uili. E iei foki o latou vae e hohoko ki he taiga fakapitoa faka faitoliki (hydraulic). E mimiti la te vai ki loto ma fakatafe atu ki ona vae e ala i ni alavai.

Hina tai

Ko na hina tai e iei ona kave (e mahani lava lima) e hua mai te kogatotonu o tona tino. E heai he ulu, ma e mafai ke totolo ki ho he itulagi e fakaaoga ai na laina vae e taki lua i ona kave. Ko na kave e he na ko ni itutino tauanoa, kae ko ni vaega moni o te tino, e i loto ai na totoga e fakamamalu ai na meakai ma ietahi totoga kehekehe.

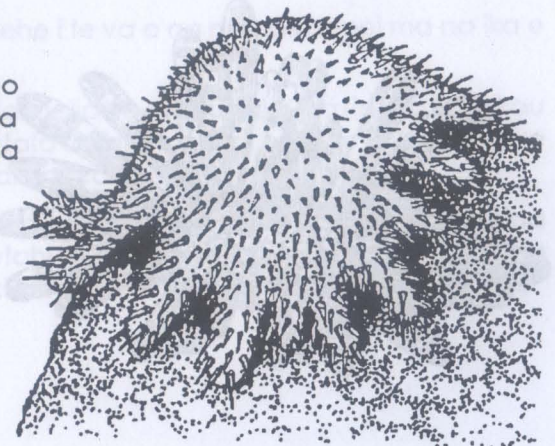


Ko te hina tai lanu moana malohi (*Linckia laevigata*) e takalahi i na lauakau i te Pahefika.

Matau na vae ina kave tena e tau fakataliaga.

Ko te tahi meaola fakapitoa o te itukaiga tenei ko te alomea (*Acanthaster planci*) e kai e ia te akau.

Ko to na manava e i fafalo mai ki fafo o to na tino ma luga o na polipe ie e kai e latou.

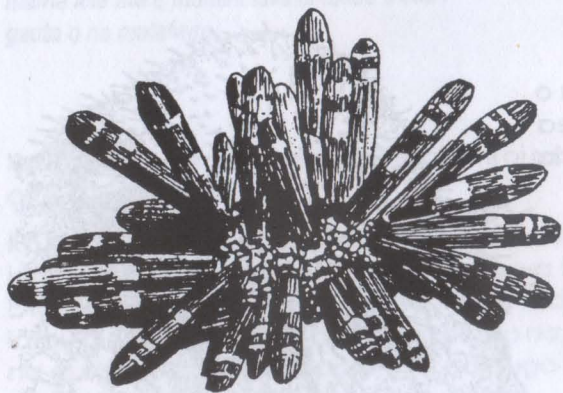
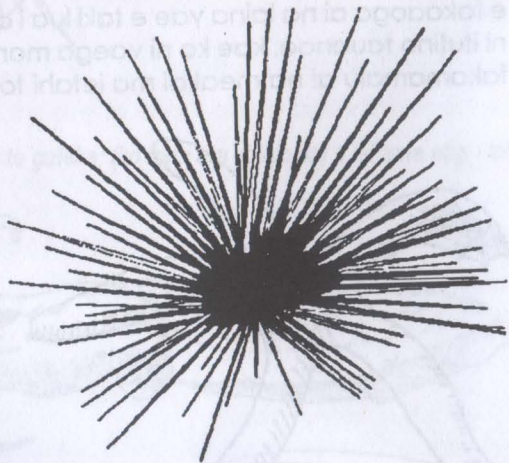
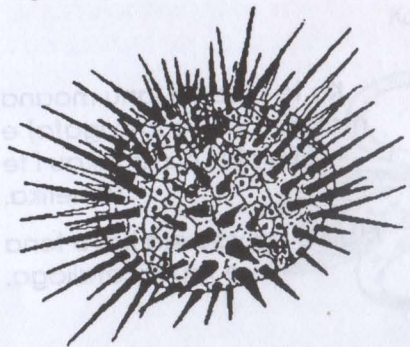


Mai teia taimi ki teia taimi e malohi ai te alomea i ietahi koga o te Pahefika ma fakakino ai te lauakau. E iei ona tala pupuku e kona ma e he tatau ona logo ki ei.

Meaola o te itukaiga o te vana

E veia ko na fetu, ko na meaola o te itukaiga o te vana e mafai ke fetolofi e ala i te fakaaoga o latou vae. Ko te gutu, e iei ai na kauvae makeketu e fakaaoga e halu ai ana meakai, ei te itu pito ki lalo. I te va o ona vae e iei na tala e lahi, e kehekehe mai teia itukaiga ki teia itukaiga.

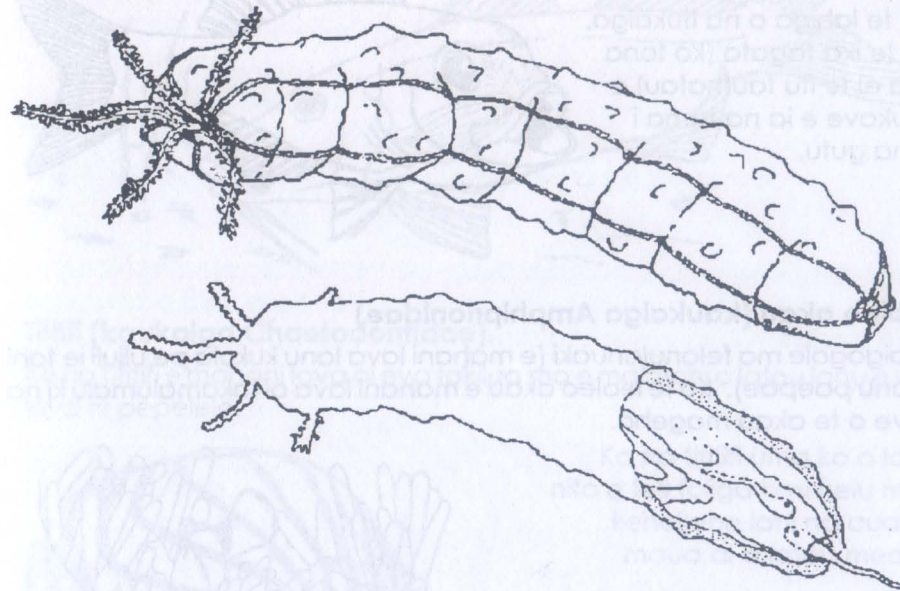
I te itu tauagavale i lalo e iei te ata o te tuitui. I te itu taumatau ko he vana, Diadema setosum, e iei ona tala e veia ni gila matakutia.



Ko na tala lanu viole ma kenakena o na kamutoa (Heterocentrotus mammilatus - i te itu tauagavale) e mahani oi maua i na matafaga.

Meaola o te itukaiga o te funafuna

Ko na meaola o te itukaiga o te funafuna e hea ni o latou kave e fua mai he tino lapotopoto e veia ko ietahi meaola o te kaukaiga tenei. Ko tona fino e foliga e veia he hohihi ma te gutu ei te tahi itu e hikohiko e ni kavei. E ui lava e iei ona vae e veia ko ietahi meaola o te kaukaiga tenei, e tau he ia fakaaogagia kae tolotolo malie e ala i te migoigoigo o na maho Fakatekia, e fakahalalau e ia he mea paepae apikipikia e mafai ke apikipikia ai ona fili.



E iei te felagolagomaki uiga kehe i te va o na meaola ienei ma na ika e ve ko te talau.

Ko te tama ika tenei (e ve ona fakaaalia i te ata i luga) e ola i loto o te gakau o na meaola ienei, ma e hau ki fafo oi hakili meakai, ma toe holomuli vave kafai e iei he mea e fakamatakugia ai.

Ko na meaola ienei e maua i te takele lavoneonea o na namo o te lahiga o na fenua i te Pahefika. Ko ietahi itukaiga meaola venei e ao, fakavela ma faka'ahu ke fakatau atu ki na maketi i Ahia ko he meakai taugata.

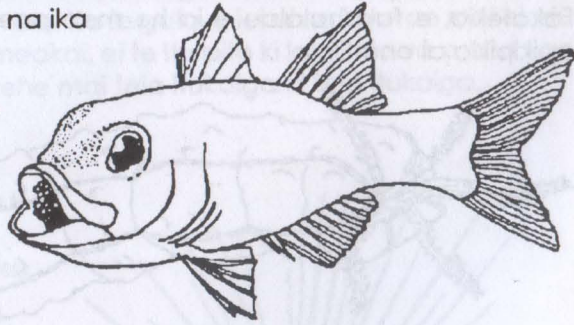
Ika o te Lauakau

E lahi na itukaiga ika o te lauakau, ko ietahi e uiga kehe ma manaia te felanulanuaki. Ko ni itukaiga takalahi e fakamatala i lalo ifo.

Fakupa (mai te kaukaiga Apogonidae)

E taigogole, ko te lahiga o na ika e lanu kukula.

Ko te lahiga o na itukaiga, ko te ika tagata (ko tona ata ei te itu taumatau) e taukave e ia na tama i tona gutu.

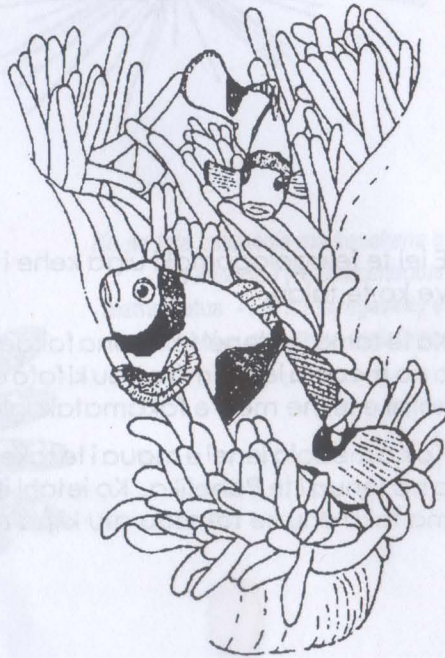


Leoleo akau (kaukaiga Amphiprionidae)

E taigogole ma felanulanuaki (e mahani lava lanu kukula pe uliuli ie tahi e lanu paepae). Ko te leoleo akau e mahani lava oi fakamalumu ki na kave o te akau mageho.

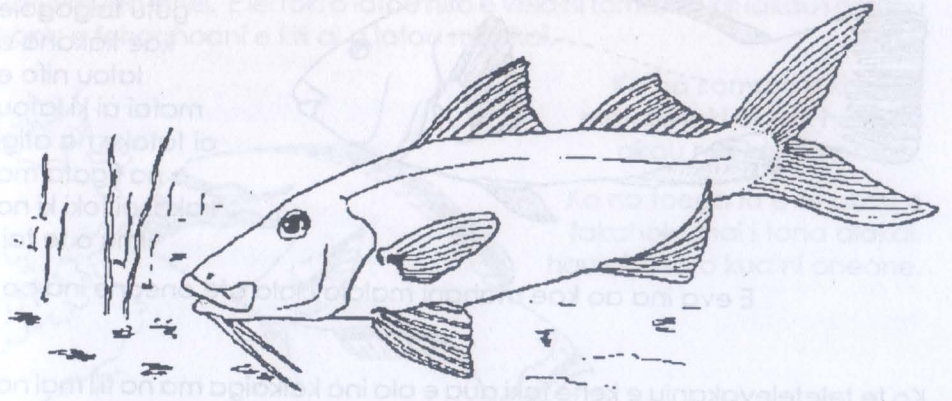
E iei te ha vavale e hua mai te tino o te ika e puipui ai ia mai na hela mageho o te akau mageho.

Ko he fakatakitakiga tenei o te ola felagolagomaki teia e maua ai e te leoleo akau te puipuiga mai ona fili kae e maua ai foki e te akau mageho na manunuga meakai e pakuku mai na leoleo akau.



Moaga/Vete (kaukaiga Mullidae)

Ko te lahiga e lanu kukula pe hehega. E lua ia, vaega o to na ava i to na lalo kavvae e fakaaoga e huahua aiki luga te oneone o te moana e hakili ai ana meakai.



Tififi (kaukaiga Chaetodontidae).

Ko na Tififi e mahani lava oi eva takilua ma e malolohi o latou lanu e veia lava ni pepelele.

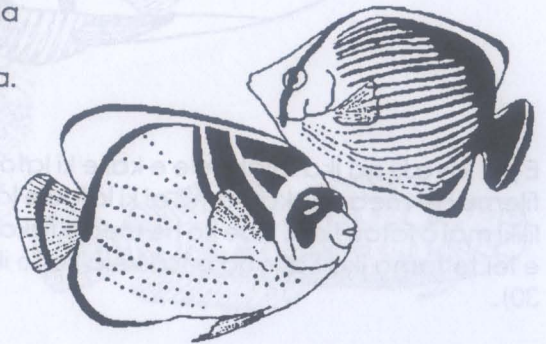


Ko na tifitifi uma ko o latou nifo e tali foliga ki ni helu ma e kehekehe lahi na auala e maua ai a latou meakai.

Ko na itukaiga kehekehe e kakai ki na palanitone, ulavai, akau momi, ma na anufe.

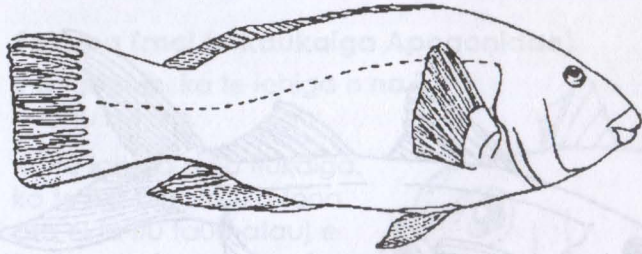
Ko ie tahi itukaiga e matakaha o latou gutu ke mimiti ai na polipe mai o latou ipu puipuia.

Kafai e fakateki, ko na tifitifi e mahani fakatutu o na tala tua kae ke mafai ai ke olo ki te va ona akau.



Lafilafi (kaukaiga Labridae)

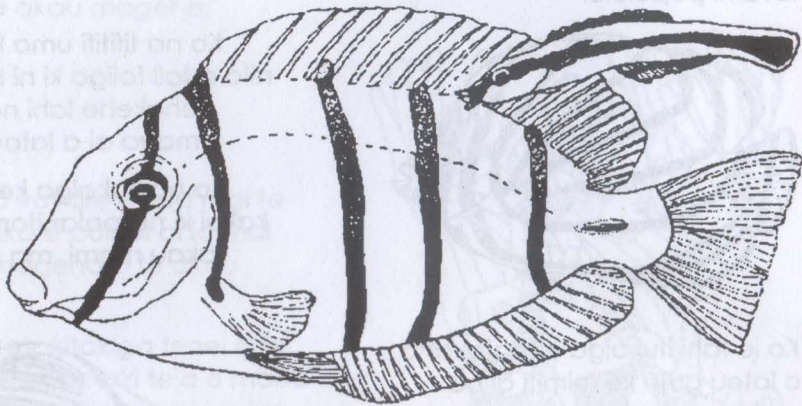
Lafilafi e iei to latou uiga e fakaaoga na kapakapa ke kakau ai kae fatoi fakaaogo o latou hikuhiku kafai e fofou ke fakagaholo.



Ko na lafilafi e gutu taigogole kae kakaha o latou nifo e mafai ai ki latou oi tatake na atigi o na figota ma kakai ai foki ki na limu o te tai.

E eva ina ao kae mahani malolo i lalo ote oneone ina po.

Ko te teletelevakanui e kehe foki aua e ola ina kaikaiga ma na fili mai na nifo, gutu, fatumea ma te tino ona ika lalahi. Ko te ata i lalo e fakaaali mai ai he teletelevakanui e fakamama e ia te manini.



E pa lava ki na ika lalahi lele e kai e ki latou ie tahi ika e fakatalitali ma te filemu i te mea e fakamama ai ki latou e laina ai ke kavekehe na meaola liliki mai o latou tino. Kae ko he mea e fakanoanoa mo na ika fuaefa ienei e iei te tama ika katiogo e tali veia ko te ika fakamama (kikila ki te itulau 30).

Kamutu (kaukaiga Scaridae)

E mananaia o latou lanu, ma to na gutu e maua i te hokotaga o latou nifo e veia ni nifo o he koke. Ko na nifo malolohi ienei e mafai ke valu kehe mai ai na limu mai na papa ma na akau mamate ma e iloa gofie na valuvuluga ienei. E iei foki o latou nifo e veia ni tamatau kili lakau i o latou kopu e fehoahoani e kili ai a latou meakai.



Ko na kamutu e ki latou mafaia foki oi kati he mea akau ma kai na polipe.

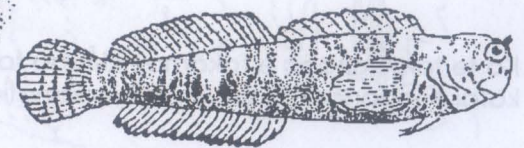
Ko na toega la o te akau e fakaholo mai i tona alakai, hau ai ki fafo kua ni oneone.

Ko te lahiga o te oneone liliki i luga o te lauakau atonu na kui mai i na alakai o na kamutu.

Talau ma na Tolo (kaukaiga Blennidae ma Gobiidae)

Ni ika taigogole kae tafitifiti e mahani oi maua i na mea papaku ma na tafeta.

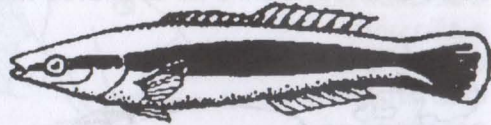
Ko ie tahi e nonofo i loto o na fatu, ka ko ie tahi e veia ko te talau i te itu agavale e nonofo i loto o ni pu. Ko o latou fua e tuku i loto o ni atigi figota kua leva ma e leoleo malu.



Ko ie tahi talau ni ika kai kakano, kai lalahi. Ko te talau nifo lalahi (*Runula*) e kakaha ona nifo ma e ogohia tana kati kafai e he fakaeteete i te taupukega. E takati e ki latou ie tahi ika fuaefa atu mai lalo pe mai tua foki.

Ko te tahi talau (*Aspidontus*, e toetiiti lava tutuha ma te tasi teletelevakaniu - kikila ki te itulau 28) e ia mafaia ai oi hoho atu ma takati na ika fuaefa e fakatalitali ke fakamama.

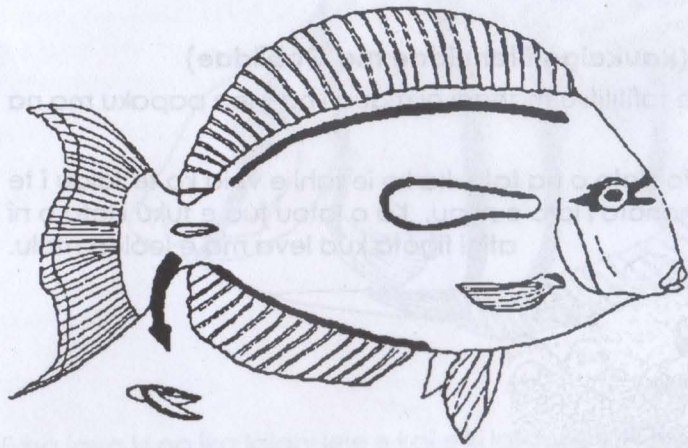
Ko te teletelevakaniu e fakaali i luga ite itu taumatau kae ko tona kopi, te talau e fakaali i lalo.



Pone (kaukaiga Acanthuridae)

E mafua mai o latou igoa ona ko na tala e veia ni naifi i te hikuhiku.

Ko te ata i lalo ko he alogo (Acanthurus olivaceus).

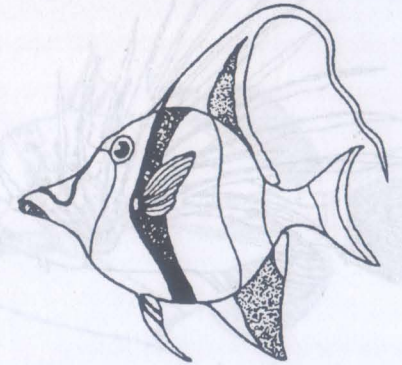


Ko te tala kakaha e fakamoe ki tona fakamoega ite hikuhiku. E fakatu kafai e lagona e te ika ko ia kua lamatia.

Laulaufau (kaukaiga Zanclidae)

E tafapili ma te kaukaiga o te pone. Ko na ika ienei hove e faitau ki na ika pito mananaia ote lauakau ia latou gaoioiga ma te lanulanu, lanu hehega, uliuli ma te paepae.

Ko o latou gutu fualoia a fakaaoga e tuitui ki loto ona pu e hakili ai a latou meakai.



Nofu (kaukaiga Gynanceiidae)

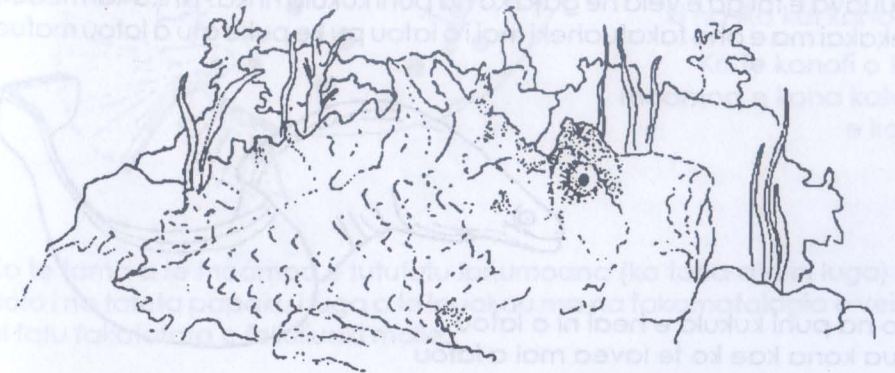
Hove ko na ika ia e pito aulega ma te matakutia i na ika akau.



Ko te nofu e heai ni ona unafi ma e takavaivai tona tino e hikomia i na mea e veia ni faletona.

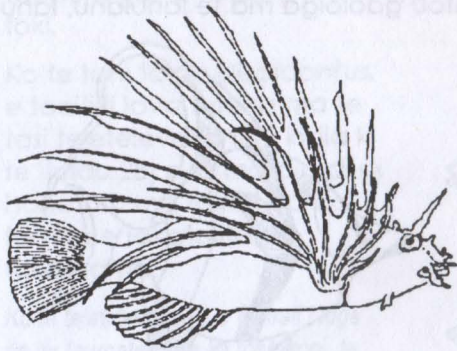
E iei ona tui kokona talatua e tutu kehe mai i tona paku manuminumi.

Ko te nofu e tali foliga ki te lauakau kua tafia e fakalologo ai i luga. Ko te ika e tali he matea, e veia ko te ata i lalo, ma e faigofie lele ona he kitea ma tu ai ki luga. Ko he tama laveda lele e mafai ke tigaina pe oti ai foki lava.



Hakuhakulele (kaukaiga Scorpaenidae)

E iei foki o latou tala kokona.

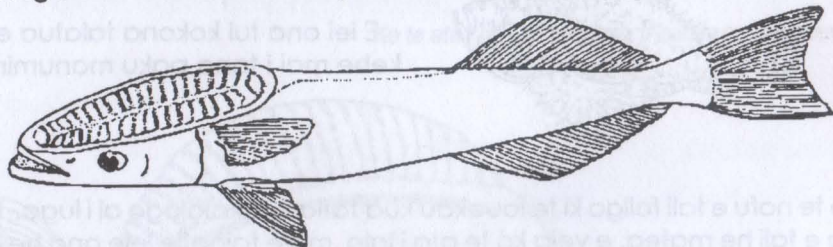


Ko te itukaiga tenei e aofia ai te ika liona takutakua i te itu agavale.

E iei ona tohi lanu kukula pe lanu moli ma hehega ma ona tala loloa e iei na tui i na pito.

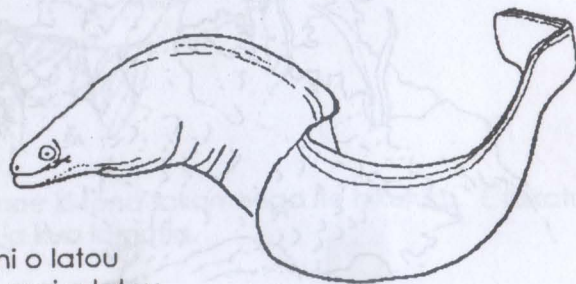
Teletelevakaniu

E iei tona tane feke e 16 pe hili atu foki ona maga e mafai ke fakagaioi i luga o latou ulu. Ona ko te tane feke tenei e mafai ai e te ika oi pipiki ki na mago, fonu, ma e pa lava ki na takele ona vaka, ma kai ai ki na matutuga e maua mai i te ika pe ko te mea foki e pipiki ki ei.



Puhi kukula (kaukaiga Muraenidae)

E ui lava e foliga e veia he gata ko na puhi kukula ni ika. Ni ika kai meaola fekakai ma e oho fakafuaheki mai i o latou pu ke puke atu a latou mafua.



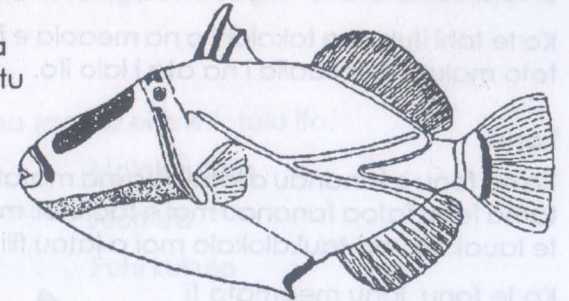
Ko na puhi kukula e heai ni o latou hua kona kae ko te lavea mai a latou kati e mafai ke kona.

Humu (kaukaiga Balistidae)

E mafua mai to latou igoa ko te mea e mafai ke loka ai te talatua ke makeketu. Ko te tala loa pito ki mua o te talatua e loka makeketu ma e he mafai ke fakamoe vagana ko te tala taigole ifo i tona lua i tua mai (ko te amoti) e fakamoe.

Kafai e lamatia te humu e ia mafaia oi fakamau ia ia lava ki he pu pe kafai e loka fakatu tona talatua.

Ko te humu e uiga kehe te makeke o ona nifo ma ona kauvae e ia mafaia ai oi kai na lakau makeketu ma na meaola e makeketu o latou atigi e veia ko te tuitui.



Moamoa (kaukaiga Ostraciontidae)

E kehe lava tona tino e veia he puha ma e heai ni o latou unafi ko ni haha pogaivi to latou.

Ona ko o latou tino e he vaivai ko na moamoa e he kakalo, ma e foliga ko ni ika tapoki gofie e na ika kai meaola.

Kae ui i teia, e fakahau e ia he kona mai tona paku ke kavea ma lapatakiga ki na ika kai kanofi.

Ko te kanofi o te moamoa e kona kafai e kai.

Ko te tama a te moamoa e tutututu lanumoana (ko tona ata ei luga) e nofo i na tafeta papaku i luga o te lauakau ma na fakamatalagia e veia ni fatu fakatafafa e feliliuaki malie.

Ko ie Tahī Meaola i Luga o te Lauakau

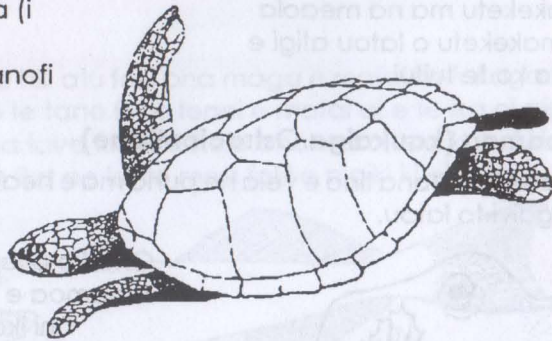
Ko te lauakau e ola ai te lahi o na itukaiga meaola ma ko te tama tuhi tenei kua fakamatala pukupuku e ia na ko ni tama meaola oi oti o te lahi o na itukaiga kehekehe. E lahi na itukaiga meaola e heai ni o latou tuahivi e veia ko na akau momi, anufe, kua he mafai ke talanoagia.

Ko te tahi itukaiga takalahi o na meaola e fai o latou ivitu, ko na meaola toto malulu, e fakaalia i na ata i lalo ifo.

Fonu

Ko na fonu e fananau o latou fua ina matafaga tau mafanafana. Ko na tama fonu ftoa fananau mai e taufetuli mai te oneone ma faikaukau ki te lauakau, ma taukalokalo mai o latou fili e lahi.

Ko te fonu lanu meamata (i te itu taumatau) e lahi te fakaaogaga o to latou kanofi ma na fua.



Gata tai

E manava i te ea ma e mafolafola o latou hikuhiku ma ko ni meaola e matua kehe lava mai na puhi kukula (itulau 32). Kae e fananau a latou tama i te tai.

E ui lava ko te gata tai ulu fonu,

Emydocephalus annulatus, (i te itu taumatau) e heai hona afaina, ko na gata tai uma e iei o latou nifo e kona ma e tatau ona kalofia.



Fakaeteete i na Meaola ienei o te Lauakau

Ko te tama tuhi tenei kua fakahino mai ai ni meaola matakutia e ola i luga o te lauakau. E ui lava atonu e foliga mananaia ma e lahi na meaola kua ki latou mauagia ni faiga e aofia i ni vai kona, tui makahakaha ke puipuia ai ki latou mai o latou fili, ma ko te lahiga ona faiga venei e matakutia ki tagata.

Ko na meaola e he tatau o na tago ki ei e lihi i lalo ifo.

Pakipaki	Molokautaiā
Kalae	Alomea
Hakuhakulele	Puhi kukula
Vana	Anemoni
Hehema	Akau mageho

Aihea e Tauga ai te Lauakau?

Ko na auivi o na akau e fakaholo oi nuti e pa lava ke kavea ma oneone teia e fehoahoani e atiake ai na matafaga. Ko te lauakau foki e fehoahoani ki te puipuiga ona matafaga ma na nuku tumatafaga mai na galu malolohi e mafua mai i na afa.

Ko te lauakau e fakalafilafi ai na namo ieia e ola ai na lakau ma na meaola e hili atu te fakaeteete gata ma e mafai foki ke fagota ai ia tagata ma te haogalemū. Ko te lauakau e maua ai na nofoaga e mafai ke nonofo ai na meaola e veia ko na paka, ula, fahua ma na ika akau ma maua ai foki na meakai a na nuku e lata ifo ki ei.

Kana heai te lauakau anei ake e lahi na nuku tumatafaga i te Pahefika e aunoa ma he puipuiga mai te tai ma aunoa foki ma te lahi o na meakai kehekehe e maua mai i te tai.

Fehili mo Tamaiti Aoga

Tulaga 2

1. Ko na meaola i lalo e matakutia kafai e tago ki ei. Fakamatala pe aihea e matakutia ai na meaola takitahi ienei.
Pule kalea _____
Vana _____
Ika liona _____
Akau mageho _____
2. Fakamatala he taliitonuga e fokotahi pe na vehea ona tutupu na motu akau. Talanoa ki te loa o te taimi na aofia ai ma pe vehea ona fehokotaki ma te tuputupu ake a te akau ola.
3. Aihea te na ko te pito ki fafo o he lauakau fuaefa e iei ai na akau ola?
4. Kaumai ni fakatakitakiga e tolu o te ola fakatahi i he hikohikomiaga i te lauakau.
5. Ko hea te mamafa o na meaola liliki (palanitone, aliki) e manakomia ke maua ai he kilokalama e fokotahi o he mago? Aihea e veia ai?
6. Tuhi he lihi o na meaola e ao pe maua i ni aofakiga lalahi i luga o na lauakau e lata mai. Fakamatala pe vehea ona afia na hikohikomiaga lauakau i te gaoioiga tenei.
7. Fakamatala na auala e mafai ke fakakino ai te lauakau i na gaoioiga a tagata.

Lihi o na Kupu o te Lauakua

(fakatahi ai ma te fakaleoga faka - Peretania)

Kalahiamu kaponeta (*Calcium carbonate*):

Ko te panihina paepae e gaohi ai na auivi o na polipe akau ma na atigi o na molahi e veia ko na fahuataka ma te aliao. Ko te lahiga o na panihina e fakaaoga ke tuhituhi ai i na laupapa ko te pani uma.

Kanivoa (*Carnivore*):

Ko he meaola e ia kaia he tahi meaola.

Polipe o te akau (*Coral Polyp* - fakaleo "pol-lip"):

Ko he meaola i te akau e foliga ki he fagaau ma tona gutu e fakatamilo ai ona kavei.

Hepivoa (*Herbivore*):

Ko he meaola e kai ki na lakau.

Afato (*Larvae* - fakaleo "lar-vae"):

Ko te vaega tamaiti o te olaga o te lahiga o na meaola i te tai e aofia ai ma te akau. Ko te lahiga o na afato e taigogole ma e opeopea i te tai ka ko heki kavea ma meaola matutua.

Pani (*Limestone*):

Ko te kalahiamu kaponeta e gaohia ai na lauakau.

Fotohinifehehi (*Photosynthesis* - fakaleo "fo -to -sin -the-sis"):

Ko te faiga e gaohia na tino o lakau mai te huavai, meakai ma te "kaponi taiokihaiite" e fakaaoga ai te malohiaga e mimiti ai mai te malamalama o te la.

Fotopalagitone (*Phytoplankton* - fakaleo "fy -to-plank -ton"):

Ko ni lakau taigogole e opeopea i te vaega pito ki luga o te tai e hulugia i te malamalama o te la.

Gaohi meakai muamua (*Primary producers*):

Ko na lakau e aofia ai na aliki ma na fotopalagitone e fakaaoga e ki latou te malamalama o te la ma na meakai.

Himipaiohihi (*Symbiosis* - fakaleo "sim-by-o-sis"):

Ko he hokotaga i te va o ni mea ola e lua e kehekehe kae ola fakatahi mo te aoga o te tahi ki te tahi. Ko na hela lakau (e takua *Zooxanthellae*) e iei a latou hokotaga venei ma na polipe ona akau.

Kavei (*Tentacles* - fakaleo "tent-a-calls"):

Ko na kavei e fakatamilo i te gutu o te polipe ote akau. Ko ietahi meaola e veia ko te feke, e iei foki o latou kavei.

Hopalagitone (*Zooplankton*):

Meaola taigogole, pe ko na afato a ni meaola fuaefa e opeopea i te tai.

Huhanitotai (*Zooxanthellae* - fakaleo "zo-zan-thell-eye"):

Ko na lakau taigogole e takitahi ia hela e ola i loto o na polipe akau.

