

MAUI BOOK III
MAUI BOOK III

GEORGE BALAZS 2 JULY 2000

MAUI Mead 2000-2001
COMPOSITION

~~13 AUG 00 - HAWAII~~
~~27 AUG 00 - HAWAII~~
~~25 SEPT 00 - MCC MOP / MOC~~
~~17-19 JAN 01 - HAWAII~~

G. BALAZS

100 sheets • 200 pages • 100 hoias
9 3/4 x 7 1/2 in/
wide ruled/
09918 © 1995 The
Made in U.S.A./Fe

3 of 3



turtles!



Pikake -
A1 669-6384



Marine Turtle Research
NMFS HONOLULU LAB
2570 Dole Street
Honolulu, HI 96822-2396

170

Date: Sat, 7 Jul 2001 23:46:44 -1000
From: George H. Balazs <gbalazs@honlab.nmfs.hawaii.edu>
To: Shawn Murakawa <smurakaw@honlab.nmfs.hawaii.edu>
Subject: Tagged Turtle sighted (fwd)

Need TDPS historical SCL, CCL and St for K521. Mahalo, George
----- Forwarded message -----

Date: Thu, 28 Jun 2001 11:29:43 -1000
From: Joylynn Oliveira <joylynn.oliveira@noaa.gov>
To: George Balazs <gbalazs@honlab.nmfs.hawaii.edu>, Shawn Murakawa <smurakaw@honlab.nmfs.hawaii.edu>
Subject: Tagged Turtle sighted

Aloha George,

I got a call yesterday afternoon (and Roger Pool was diving at Makana Landing and saw a tagged turtle (# K521) with tumors on its right eye and its left eye was missing. I told him that we could not rescue it because it was in the water but I'd at least pass the info on to you so you knew that a tagged turtle was sighted.

Joylynn

--
Joylynn Oliveira, Hawaiian Cultural Educator
Hawaiian Islands Humpback Whale
National Marine Sanctuary
726 S. Kihei Rd.
Kihei HI 96753
808-879-2818 voice
808-874-3815 fax
joylynn.oliveira@noaa.gov



Date: Wed, 25 Jul 2001 18:54:00 -0400
From: Ursula Keuper-Bennett <howzit@turtles.org>
To: George H. Balazs <gbalazs@honlab.nmfs.hawaii.edu>
Subject: Logger 483454

Logger 483454 was set at The Rock this morning. All three loggers in the exact locations they were last summer. ave

Date: Mon, 28 Jul 2008 18:25:48 -1000
From: Glenn Beadles <glenn@onloc.com>
To: George H. Balazs <gbalazs@honlab.nmfs.hawaii.edu>
Cc: Glynnis Nakai <glynnis_nakai@fws.gov>, CHERYL KING <shezking@yahoo.com>
Skippy Hau <Skippy.Hau@hawaii.gov>, Randy Awo <Randy.K.Awo@hawaii.gov>
Subject: Re: turtle nesting update ~ July and photo confirmation.....

I do and mahalo to you....
Will keep everyone posted and updated with any new sightings or information

A hui hou,

Glenn Beadles
808-870-7499

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Date: Tue, 24 Jul 2001 12:19:38 -1000
From: Shawn Murakawa <smurakaw@honlab.nmfs.hawaii.edu>
To: George H. Balazs <gbalazs@honlab.nmfs.hawaii.edu>
Subject: Re:Name and phone# (fwd)

RE: Maui nesting info from Van

----- Forwarded message -----
Date: Tue, 24 Jul 2001 09:46:04 -1000
From: VAN_NESS_P_DACANAY@EXEC.STATE.HI.US
To: Shawn Murakawa <smurakaw@honlab.nmfs.hawaii.edu>
Subject: Re:Name and phone#

Good morning,

okee dokee...here's the scoops...Edwin Ayudan (#661-3701) was the caller, I referred him to Steve Williams, who in turned call Skippy(who happened to be on vacation)...I told him I wasn't going to call Skippy because he was on vacation...anyways, by the time Skippy get's the call and shows up at our office it's around 2:30 pm and he comes in to p/u his gps and goes out to Flemings Beach in the Kapalua Beach area. Around 3:10 pm I get a call from a County Lifeguard saying that a camper had a turtle come into his tent and so he got the turtle out of the tent then the turtle went on the side of the tent and dropped eggs. To make this long story short, It happened to be the same nest area that Mr. Edwin Ayudan called about...so now we have 2 people seeing the same turtle nest (I think) at different times. Skippy says the camper saw the turtle around 1:30 am (Monday morning). I'm still working on some of the details and will get back to you on that later...any questions, call me. Van ;+)

(123)

Date: Wed, 25 Jul 2001 16:13:04 -1000
From: SKIPPY HAU@EXEC.STATE.HI.US
To: WILLIAM S DEVICK@EXEC.STATE.HI.US
Cc: gbalazs@honlab.nmfs.hawaii.edu, Margaret.Dupree@noaa.gov,
JEFFREY S WALTERS@EXEC.STATE.HI.US
Subject: 7/25/01 Turtle Nest D. T. Fleming Beach

DIVISION OF AQUATIC RESOURCES - MAUI
DEPARTMENT OF LAND & NATURAL RESOURCES
130 MAHALANI STREET
Wailuku, Hawaii 96793
Phone # (808) 243-5834
July 25, 2001

To: Bill Devick, Administrator
From: Skippy Hau, Aquatic Biologist

Subject: Green Turtle Nest Reported at D.T. Fleming Beach, Honokahua Bay

On Monday, 23 July 2001, Dr. Steve Williams called and left a message on my phone recorder. Van received the original call and informed Dr. Williams because I was on vacation. He was unable to find a volunteer to check the shoreline. Ms. Glynnis Nakai, Refuge Manager, was busy in the field at Kealia Pond NWR. Mr. Edwin Ayudan (Ph.#661 3701) reported a nesting turtle. I returned in the afternoon and contacted Mr. Ayudan. I explained I would be coming to check the shoreline area between 15:00 and 15:30.

*Maui
book*

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I inspected the north side of the beach and could not find any tracks. I checked with the lifeguard Wyllie (Ph.#669-6246) who said they had found the tracks in the morning but covered it up so people would not be able to find the nest. As he pointed in the direction where he saw the tracks, a camper was waving his arms to try to get our attention. He noticed I was checking the beach. I went back to that area with the lifeguard.

Mr. Emy Aguinaldo (1-800-679-7566 pager) was camping on the beach. He said the turtle came up around 21:00. He watched as the turtle tried to dig a nest. It would hit a rock and it would move to another location. After a while, he went into the tent and the turtle at one time began trying to dig under their tent. The turtle finally nested and returned to the ocean. He described it as a large green turtle over three feet long. He did not notice any tags.

I took photos of the nest and surrounding shoreline. There appeared to be one nest site.

This afternoon, I contacted Wyllie the lifeguard who reported no other turtle tracks.

c: DOCARE - Maui

email copies:

Jeff Walters

George Balazs, NMFS

Margaret Dupree, NMFS

MAUI BO
Date: Fri, 12 Dec 2008 19:13:59 -0800
From: mary gridley <maumary@gmail.com>
To: George H. Balazs <gbalazs@honolab.nmfs.hawaii.edu>
Subject: Re: From George Balazs Re: sea turtle tag

Dear George,
I really appreciate all you great information. I will get the Honu book! If you get over to Maui, give me a call (808-669-7716) or email me. I would love to show you the area where all the turtles hang out and eat. Not many people go there. Merry Christmas and Happy New Year.
Mary

19 JUNE 2001 NOAA Sanctuary
^{Wed} Wednesday Turtle Strand Training
+ Evening Lecture By me

cloth tags / longer string / Penny cutters

TARPS 8'x10'

Donna - stickers

----- Forwarded message -----

Date: Sat, 13 Jan 2001 20:43:43 -0500
From: Ursula Keuper-Bennett <howzit@turtles.org>
To: "George H. Balazs" <gbalazs@honlab.nmfs.hawaii.edu>
Cc: Peter Bennett <honu@turtles.org>
Subject: Parachuting out...

Peter made a good point. I'd stay up til past midnight on this and still not make headway --and be certain.

He said to wait and see what Jeanette Wynekin will toss in the mail for us.

I've reread enough to go back to my original belief.

That what I call the connective tissue is the sclera.
What I call the "corneal edge" is the limbus.

Virtually all tumours erupt from the sclera and the limbus will frequently hint of problems by showing white veining or hotspots or both.

What I call "black pearls" are regressive tumour artifacts on the sclera and "nodules" are tumour artifacts still apparent in the outer canthus.

George I got to get back to the clips. I have to finish them this weekend. Just HAVE to.

(T36)

----- Forwarded message -----

Date: Sun, 14 Jan 2001 13:40:12 -0500
From: Ursula Keuper-Bennett <howzit@turtles.org>
To: "George H. Balazs" <gbalazs@honlab.nmfs.hawaii.edu>
Subject: Further on NM's

Back to this.

Found you an image. Snoozy. We call him that because he slept all through 1999 and most of 2000.

When I watch him blink it looked like there was "another" third eyelid wiping back to front. When I first noticed that (1999) I didn't know there was only one third eyelid and it was at the front.

Now it works only with smooth flat gray tumours (the kind you get with regression cases). When a honu blinks it really can look like this gray tumour is "wiping" across the eye back to front.

And certainly anyone looking at Snoozy would think the tumour and NM are part of the same structure. Snoozy regularly lets part of his NM show (he's so laid-back and calm he's almost catatonic. But alert honu you can't see their NM's)

At this point if I looked at a honu and it gave me the impression it had an NM posterior and wiping back to front, I'd immediately think "ah hah regression case" and go in for a closer look.

Here's the image.

At 10:20 PM 1/13/01 -1000, you wrote:

- >We ain't done yet. For one thing I left you hanging today on a question,
- >one point. I went to my specimen storage but there just wasn't time to
- >drain formalin, pull out half-heads with eyes etc and look carefully. NM
- >(not NC, has to be NM for proper abbreviation, wouldn't you think?). You
- >asked if the NM is only anterior, from anterior corner sweeping posterior
- >direction when closing. Yes the NM does sweep that way. But I'm
- >troubled. I keep visualizing (hallucinating?) that I'm seen it (or
- >another one) from the posterior corner sweeping anterior. Now I know that
- >may sound a little wacky....but
- >
- >What say yee, seen any hint of that in your pictures, in real-life looking?

----- Forwarded message -----
Date: Sun, 14 Jan 2001 09:22:02 -0500
From: Ursula Keuper-Bennett <howzit@turtles.org>
To: "George H. Balazs" <gbalazs@honuab.nmfs.hawaii.edu>
Cc: Peter Bennett <honu@turtles.org>
Subject: NM = third eyelid

NM (agreed that's the better abbreviation)

Sir, capturing eye-clips I've also paid special attention to the NM because as I said several of our honu are getting abnormalities of the NM.

The NM is at the front only. And I'm certain. The NM sweeps from front to back. A drowsy honu might have the NM showing part of the way but wide-open eyes don't show it if a honu's looking straight at you.

I've never seen anything internal sweep across the eye from posterior to anterior. Now there are occasions I can think of where a honu could create that illusion. But regression cases only --a tumour artifact (dark grayed and plastic-looking) COULD appear like a third lid during an eye blink, yes.

I've also been analyzing eye blinks. Honu eyes go in (like sucked in) on a blink and then pop out when the eyelids release them. Makes them look like frogs! I have no idea how they do it. But with frame-by-frame slow, one frame the eye is closed, the next WIDE open. And eyes pop out wide.

It's like ON and OFF and no in-between.

Analysing eye blinks. A turtle who can close its eye over a tumour may still have a small tumour peeking out the outer canthus even though the eyelid's slammed shut. That "feature" helps me determine what honu will be candidates for "nodules" should they regress.

And yes, I've been capturing eye blinks also.

And again thank you for taking time from the mountains of work/obligations you have to help out yesterday. Didn't matter you never got to physically checking the eyes, you're thinking --there's dialogue, and "what if's" and right now that really counts.

Since yesterday I'm now 99% certain it's cornea, limbus, sclera. That's progress!

At 10:20 PM 1/13/01 -1000, you wrote:
>We ain't done yet. For one thing I left you hanging today on a question,

----- Forwarded message -----
Date: Sun, 14 Jan 2001 11:42:49 -0500
From: Ursula Keuper-Bennett <howzit@turtles.org>
To: "George H. Balazs" <gbalazs@honlab.nmfs.hawaii.edu>
Subject:

(will share this with Peter AFTER sending to you so he won't get shipped the attachment)

OK.

Remember how I said I thought the back of a honu eye was the conjunctiva? Well it likely is. I concluded that because I looked at a human eyeball and you know that pink at each corner? That's the conjunctiva.

Inner/outer canthus refers to the actual corners of the eye.

So when I say tumours erupt at the conjunctiva I was right --at the conjunctiva outer canthus. Honu regression cases who had a tumour there will often leave a tumour artifact we call a "nodule". Uwapo's like that.

I just stumbled on a cat eye --also shows the conjunctiva. Notice the NM on a cat. Just like honu. In fact humans have the remains of a third eyelid, that's why the inner canthus of our eyes are rounded, bulbous. There's an ever so-subtle remnant of an NM in humans.

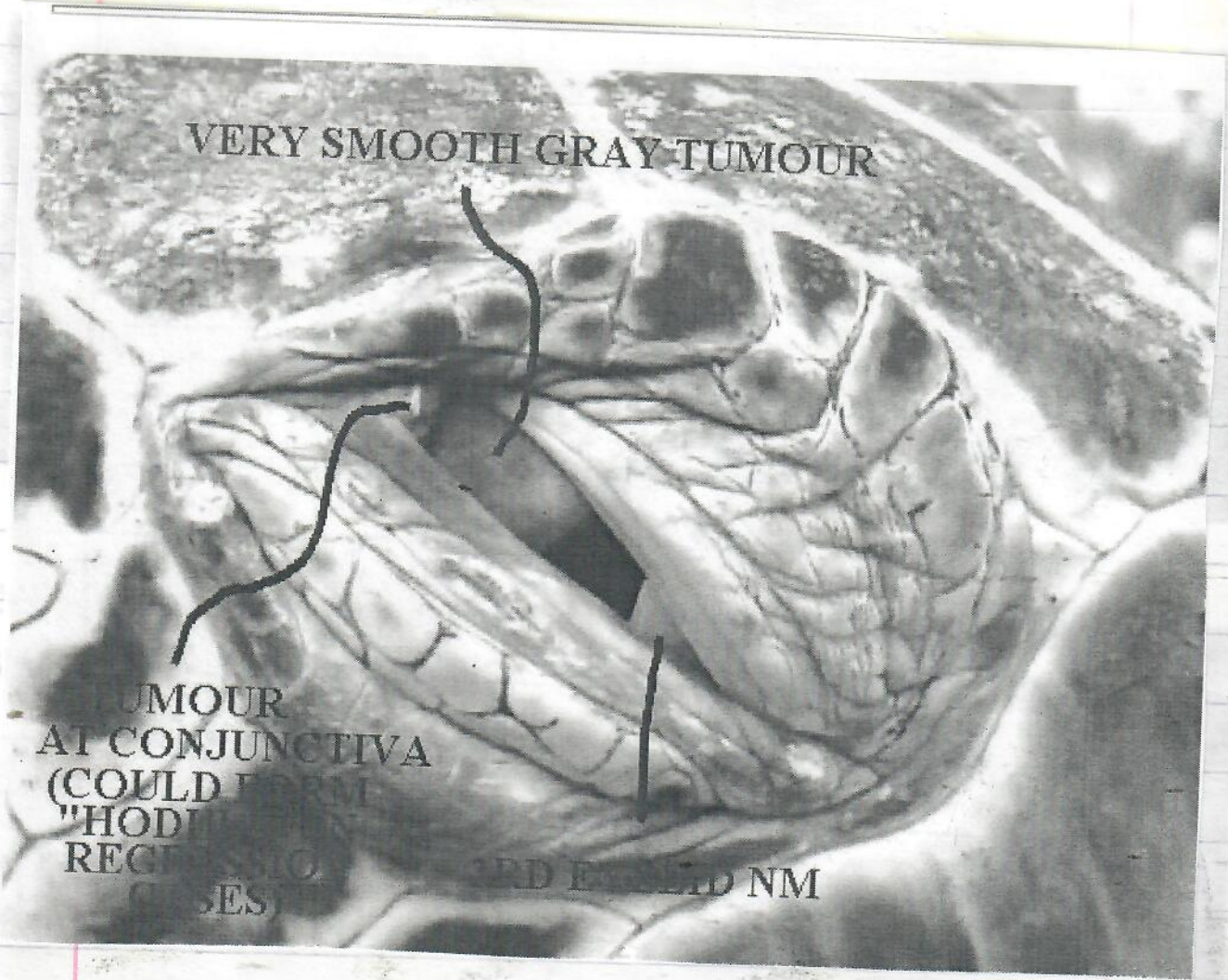
And notice it's "third eyelid" --eyeLID. One. Only one and for all animals it's anterior the eye.

And so I'm confident now in saying that 100% of all incoming FP shows up in the sclera first. Whitening. Either along the limbus. Or as discrete hotspots in the sclera. Or in combination. Some will have a hotspot and then tumour erupt at the conjunctiva.

100%. No exceptions. And for practically all honu the first tumour to appear is in the sclera. If the virus is first detected in tumours, then the eyes are where the virus first "exposes" itself.

Sir, examine these eyes closely because I really believe it makes sense now.

Next, I plan on re-reading Brooks. Now that I've done more "homework". Then complete the last of the eyeclips.



VERY SMOOTH GRAY TUMOUR

TUMOUR
AT CONJUNCTIVA
(COULD FORM
"HODU"
RECEPTOR
CASES)

RED EYED NM

hodu (early pre-eruptive)

----- Forwarded message -----
Date: Sun, 14 Jan 2001 13:11:37 -0500
From: Ursula Keuper-Bennett <howzit@turtles.org>
To: "George H. Balazs" <gbalazs@honlab.nmfs.hawaii.edu>
Cc: Peter Bennett <honu@turtles.org>
Subject: Brooks et al

Cuts to the chase and Brooks writes:

"The lesions arose from the cornea, the limbus, the conjunctiva, or the mucocutaneous junction of the eyelids."

I UNDERSTAND what he writes now!

"The variation histologic appearance noted in the four turtle eyes between the sessile corneal lesions and the pedunculated, aborizing conjunctival fibropapillomas may simply indicate normal progression in GTF maturation, or could be related to differences in ocular microenviroments provided for tumor and viral replication."

Translation? They haven't got a clue. They're guessing just like us.

Hey and check this out.

"A distinct, isolated conjunctival mass was also present in one of the globes. A third eye had a single lesion arising from the limbus, whereas the fourth eye had one mass arising from the conjunctiva of the fornix."

If limbus and conjunctiva mean the same to me as to him, those tumours were like honu tumours.

Last and final --he mentions lesions arising from the "corneoscleraL junction". That sounded like my "corneal edge". So I surfed the net and found this human eye.

<<http://www.regionsem.org/education/workshop/eye/e-answers.html>>

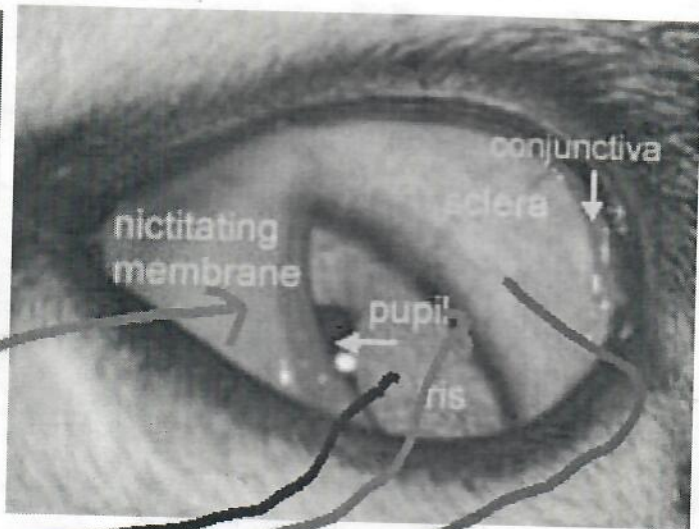
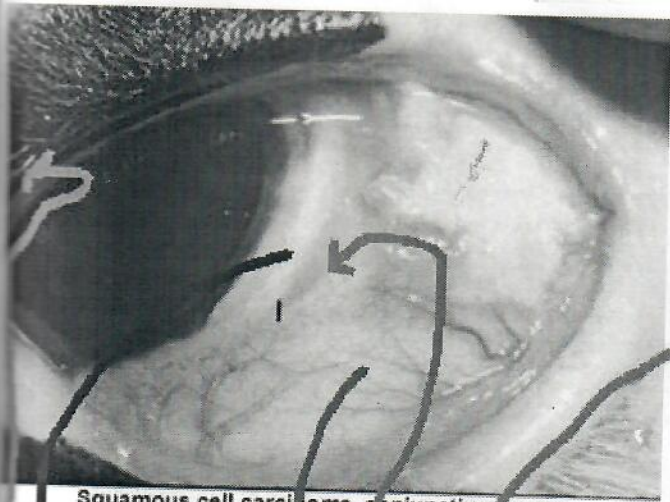
And look what it shows. Same place --the "cut" between the coloured part of eye and the white. Obvious "cut" in honu also. And best of all look what they put in brackets for "corneoscleral junction" --(limbus)

I'm certain now that what I refer to as the "corneal edge" is the limbus. And what I called "connective tissue" is the sclera in honu.

I'm satisfied but of course we must now wait for Jeanette's input. But

horse

cat



Squamous cell carcinoma, conjunctiva horse; 1 - limbus

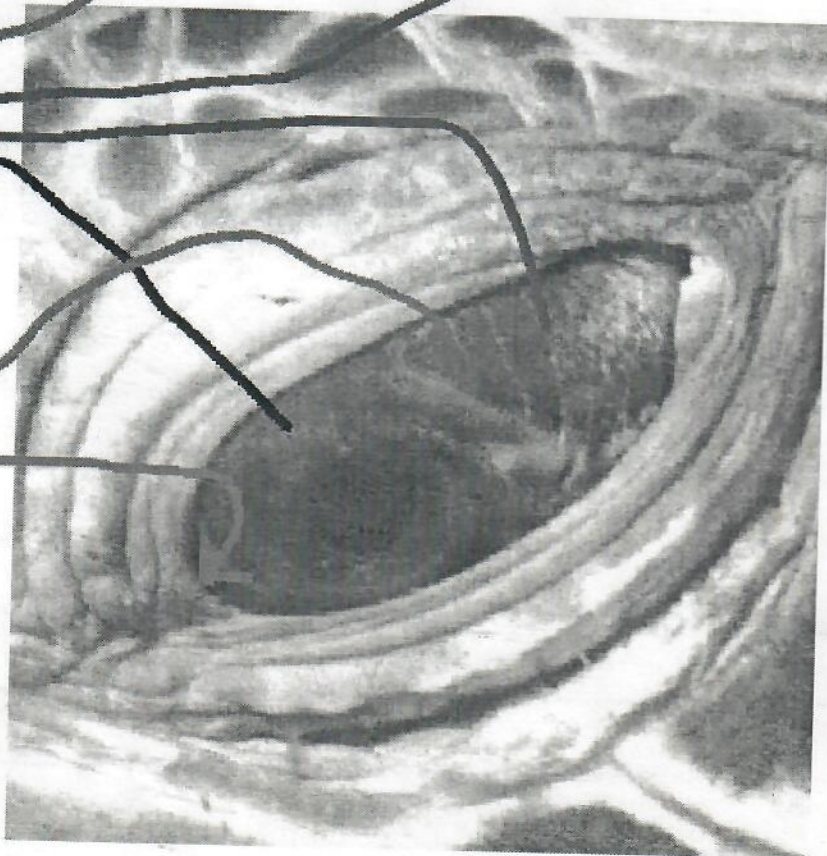
cornea

sclera

limbus

NM

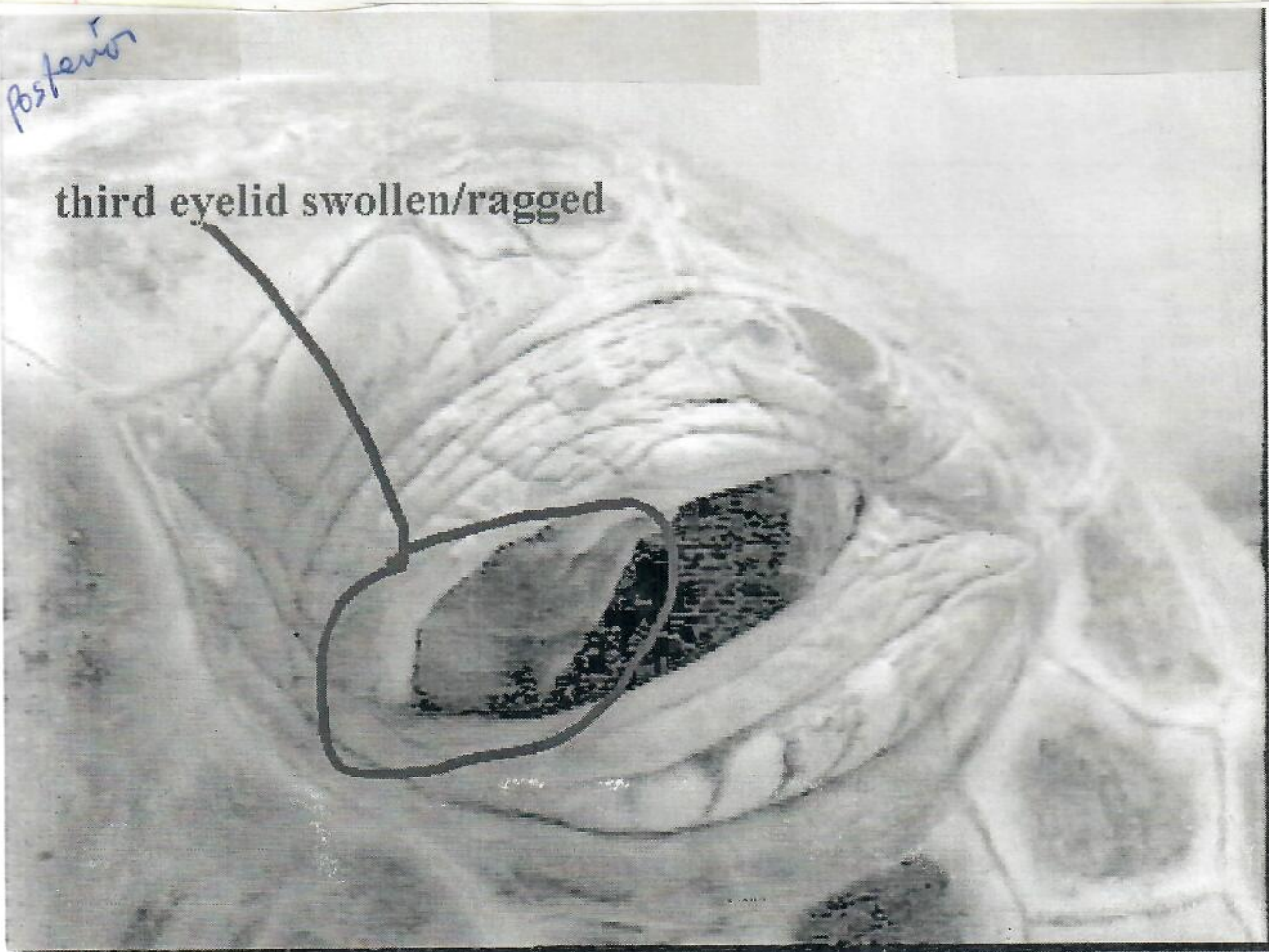
(NM not visible in horse or honu)



honu (early pre-eruptive)

posterior

third eyelid swollen/ragged



----- Forwarded message -----

Date: Sat, 13 Jan 2001 17:09:16 -0500
From: Ursula Keuper-Bennett <howzit@turtles.org>
To: "George H. Balazs" <gbalazs@honlab.nmfs.hawaii.edu>
Subject: Re: eye diagrams

I only read about the NC about two weeks ago. (I wanted to learn about NC abnormalities to explain what's wrong with some of the Honokowai group.)

Also called third eyelid. Humans only animal that doesn't have an NC. Wipes dirt and lubricates the eye. Especially prominent on owls, crows, snakes. Looks like opaque smooth plastic when healthy and ragged as an old wiper blade when it isn't (like some of our honu's NC)

Situated anterior the eye and is wiped across from front to back during a blink or when honu wants to snooze NC can be even more than half across the eyeball.

A wide-open eyeball when turtle is looking straight at you and you are 90 degrees to its profile won't show the NC.

See photo of an abnormal third eyelid.

At 11:16 AM 1/13/01 -1000, you wrote:
>the nc always shows a little, why would you show it some? Are we talking
>the same thing when I say nc?
>

----- Forwarded message -----

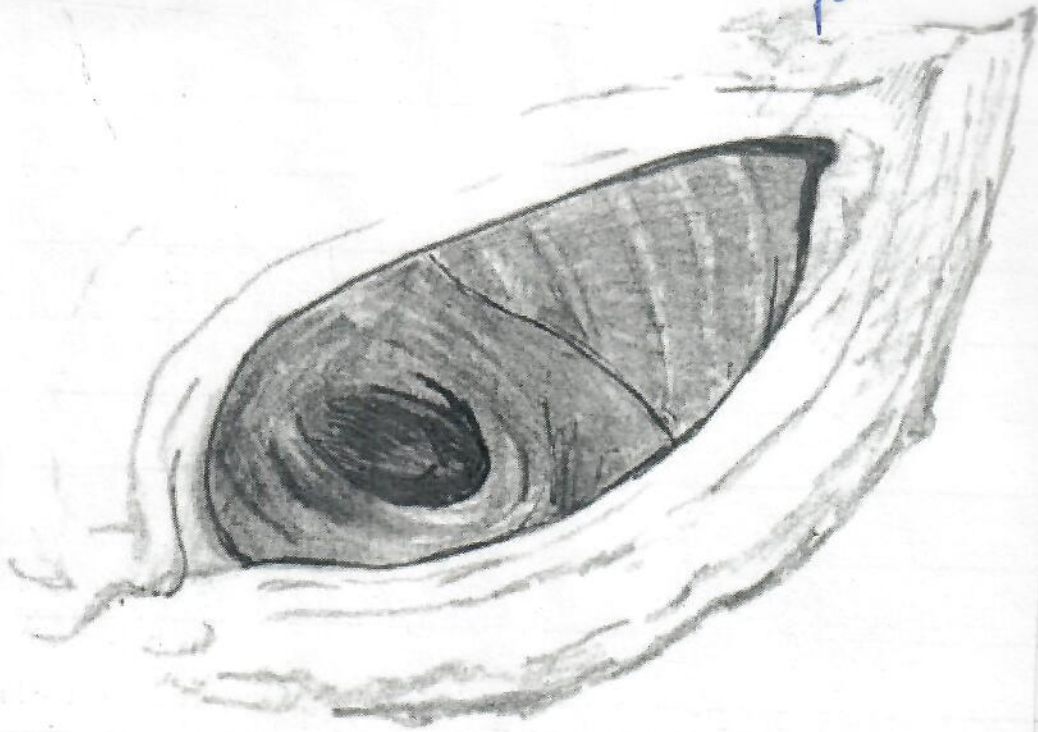
Date: Sat, 13 Jan 2001 14:00:25 -0500
From: Ursula Keuper-Bennett <howzit@turtles.org>
To: "George H. Balazs" <gbalazs@honlab.nmfs.hawaii.edu>
Subject: eye diagrams

Just finished. Will just show two here. To give an idea. A normal eye and a TSOR (Tumour Score 0 regression) View the two side-by-side and you'll see the difference. By the "pleats" being obliterated.

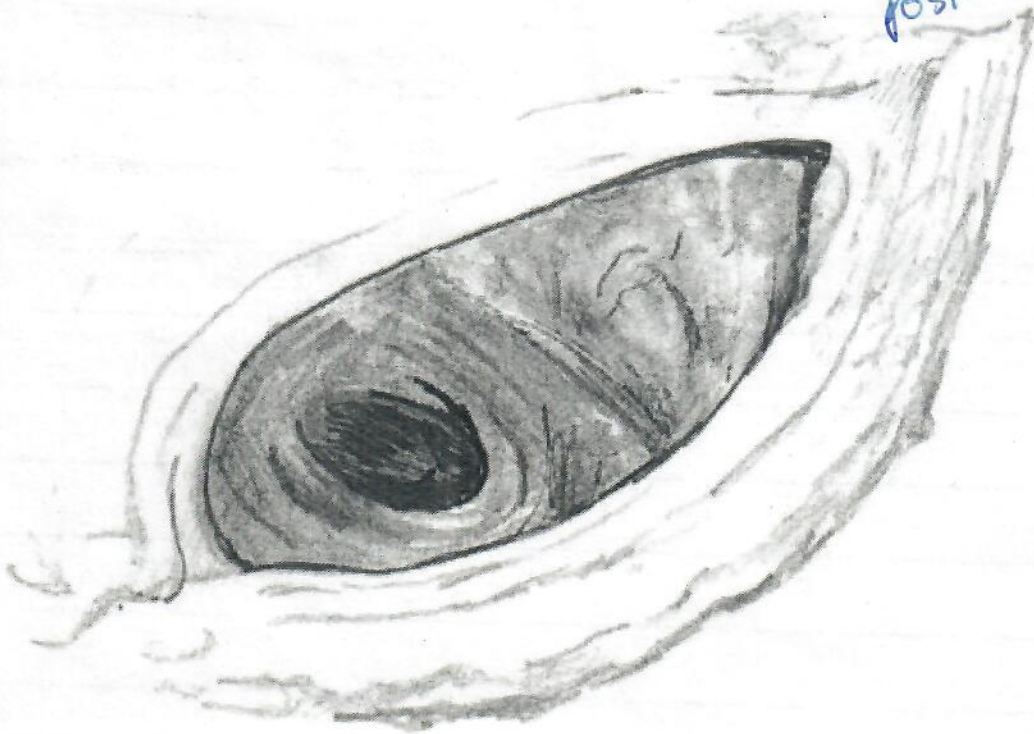
For our paper each diagram will have three photos showing real turtle eyes so people can see the "reality" to the drawings.

SIGH back to work...

Posterior



Posterior



----- Forwarded message -----
Date: Tue, 02 Jan 2001 13:48:27 -0500
From: Ursula Keuper-Behnett <howzit@turtles.org>
To: "George H. Balazs" <gbalazs@honlab.nmfs.hawaii.edu>
Subject: the other part of my room

Mary

Moving right...

ukbroomkahakii.jpg

That's Kaha ki'i. Notice all the yellow Postits not there last time you saw this area? All have honu ID numbers I need when working the minivids. See that round plastic thing to Kaha ki'i's left? 50 CD ROMS in there to copy over the minivids.

Electric fan needed to keep the computers cool. (Our air conditioning quit years ago and we never got it fixed. We're always gone in the summer anyway)

And now my "library" --that Balazs built.

ukbroomrearwallleft.jpg

All video on top shelf is from old days. Before digital. I keep them mainly for records. There's an aquarium to the left with nothing in it but I hope to have plants. Again. For when I retire. Simply no time now.

Behind the turtle cross-stitch is 'critical video stuff like head cleaning tapes for each of the formats. See those white manuals above the stitching? Those are all 10 Indian River manuals sent to us by FL

Below in two white plastic bags are the transparencies we used for Symposium, now obsolete because of PowerPoint.

D:\TEMP\ukbroomrearwallcentre.jpg;

All turtle-related books literature are here. Right hand corner? See those folders resting horizontally on the top shelf just under my Hawaii Islanders hitting helmet?

All the FP papers now in FILE FOLDERS! The top one just says BALAZS and has all where you're the first author.

----- Forwarded message -----
Date: Sun, 31 Dec 2000 09:22:11 -0500
From: Ursula Keuper-Bennett <howzit@turtles.org>
To: "George H. Balazs" <gbalazs@honlab.nmfs.hawaii.edu>
Cc: Peter Bennett <honu@turtles.org>
Subject: Re: Poster- sorry Peter for my delayed input to you

>And even then there are faces that
>are so close (admittedly not many) that matches aren't 100% positive.

We've had two. One was easily handled. Left sides were virtually identical but the right profiles were SO DIFFERENT it was a no brainer. Two different honu.

But the intriguing one... is U362. Nested this summer. Her left is all but identical to Kimo (1992-93). I can't believe U362 is Kimo but the possibility exists.

And that many hours of tedious work is dead-on.

SIGH The Slave of the World must now turn her attention to capturing minivids. I still have four entire tapes to process!

(Peter and I are doing Slave of the World contests. Like who's the bigger Slave of the World. Him improving the database design or me capturing eye images. I say it's him. His stuff more boring. At least to me.)

Peter? To repeat:

>I think you Should Do It, not sure why you would backout, though some do
>each time, it's not a shame to bail when you have to for valid reasons,
>that's for sure.

>Re-INventing? Bull. Not the case, your Application here is novel, maybe
>unique, and certainly of Value.

HAH! Outvoted! Two-to-one.

Now make it so.

At 01:09 AM 12/31/00 -1000, you wrote:

>Apologies, I started this message two days ago!

>

>I think you Should Do It, not sure why you would backout, though some do

----- Forwarded message -----

Date: Sun, 03 Dec 2000 19:15:01 -0500

From: Ursula Keuper-Bennett <howzit@turtles.org>

To: "George H. Balazs" <gbalazs@honlab.nmfs.hawaii.edu>

Subject:

Working very hard compiling all eye images.

What I needed was your normals.

I just managed to view video of Tutu and Nui's eyes. Very close up. Both were first sighted by us in 1990. Tutu regressed in 1992 and Nui 1994. Our oldest regression cases.

While neither honu has an identifiable tumour, not even a lump, they DO bear that scarring I spoke about. That FP signature.

I believe sir, that the tissue that made up the tumour covers that posterior tissue so it never goes back to original. These kind of pleats. Normal eye has pleats. Pleats wiped out with FP.

Man I got to do better at explaining this before the paper. The thing is I will draw what I believe happens and we will present that in computer animation.

I have to ask you something.

What are the chances you can shoot adult eyes? Like SeaLife Park. I need eyes guaranteed never to have had FP. I need to know whether older honu retain those pleats (The very few we've seen --newbies-- at Honokowai do, but I never got an excellent pic and that's what I need)

But I'd need film this time. Mavica would not cut it for the next step.

Please think about it. I can write the paper without this material. But I want to push the envelope on pudding proof.

----- Forwarded message -----
Date: Sun, 03 Dec 2000 20:08:50 -0500
From: Ursula Keuper-Bennett <howzit@turtles.org>
To: "George H. Balazs" <gbalazs@honlab.nmfs.hawaii.edu>
Subject: Re: The Midway honu

Adus

Then go to Honokowai. Take Thierry with you. And your digital.

I urge you to go to Honokowai and videotape those eyes four and a half months later. January. The pudding proof thing can be had by January.

Prove to yourself that the most subtle white veining of the corneal edge spells FP.

That white veining/warping of the pleats is another.

I "called" eyes that hadn't the barest HINT of tumours --as I did for Midways. They all should have gotten worse, either true tumours or more white.

George, examining eyes for honu is predictive. One stage leads to another. Also there appears to be at least three kinds of eye tumour eruption points. Out the corner, the middle and the corneal edge. I don't know what that means though.

Or whether one type regresses easier than another.

More I don't know than do. But believe me, the eyes will tell you lots. Including most importantly --when you're looking at a honu with zero tumours, whether it has never had FP or is a regression case.

You will not be wasting your time.

At 02:45 PM 12/3/00 -1000, you wrote:
>it's paramount I would think.

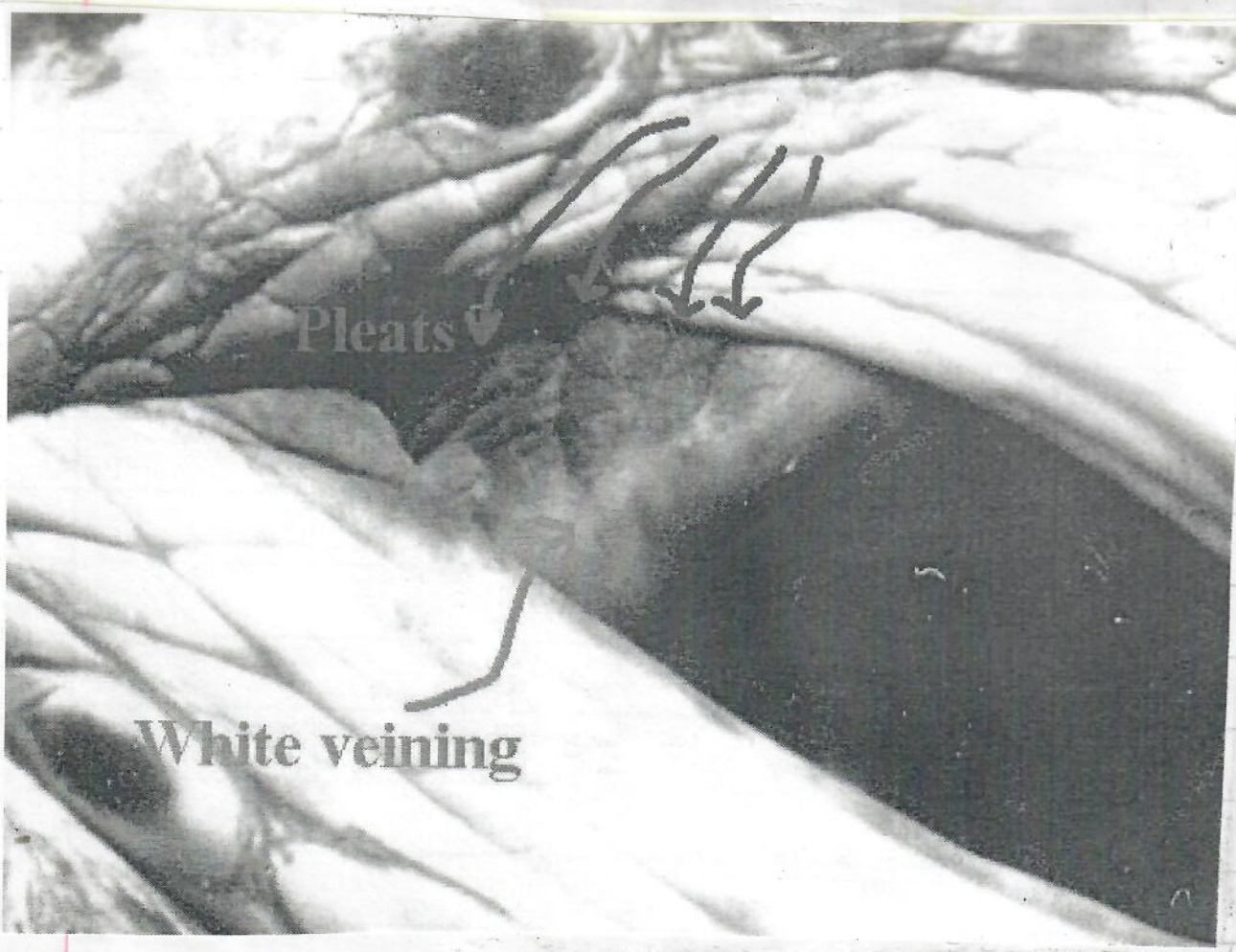
HAM (quoted): Two-to-one.

how much it is.

At 11:03 AM 12/31/00 -1000, you wrote:

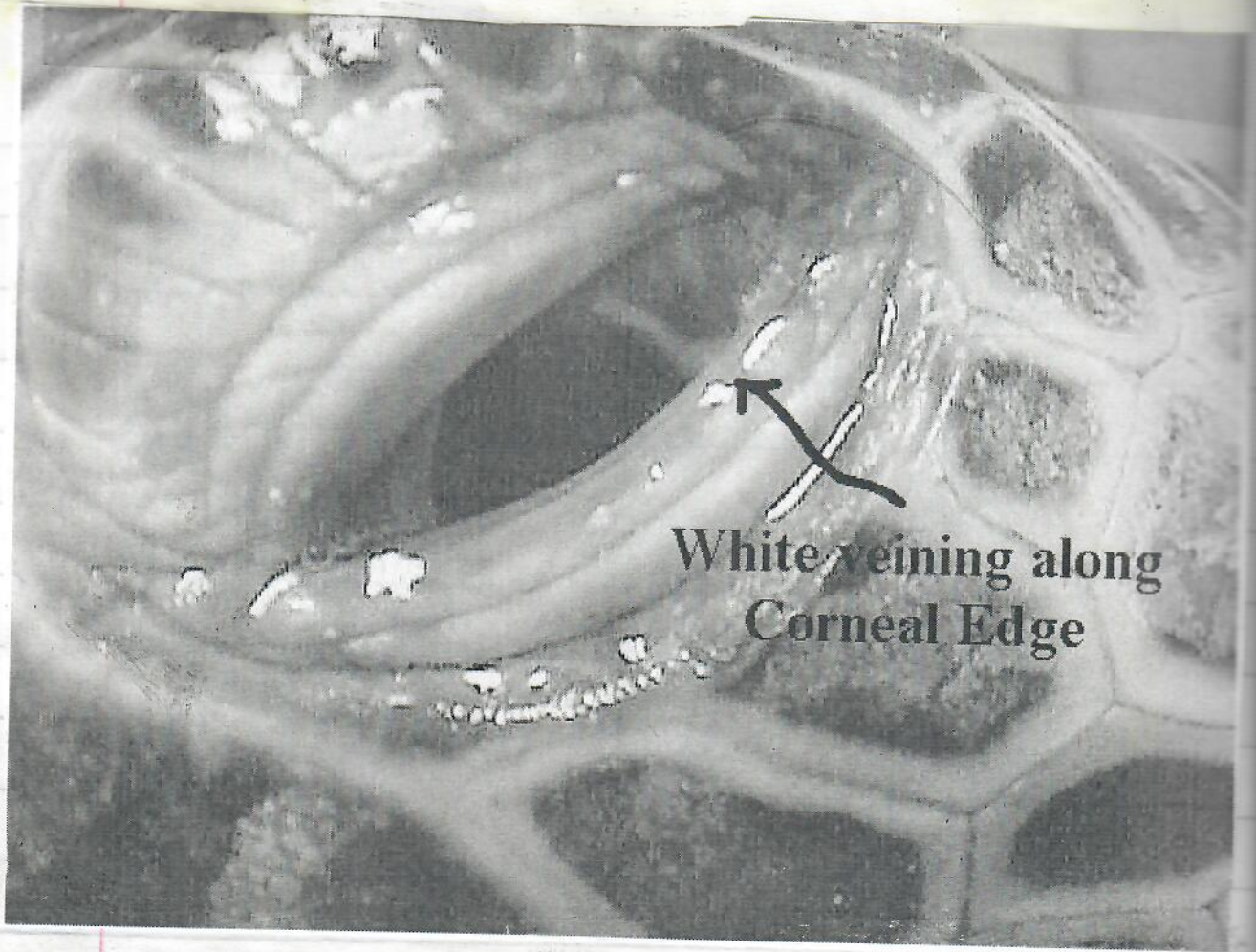
>Apologies, I started this message two days ago!

>I think you should be in, not sure why you would backtrack though sure I

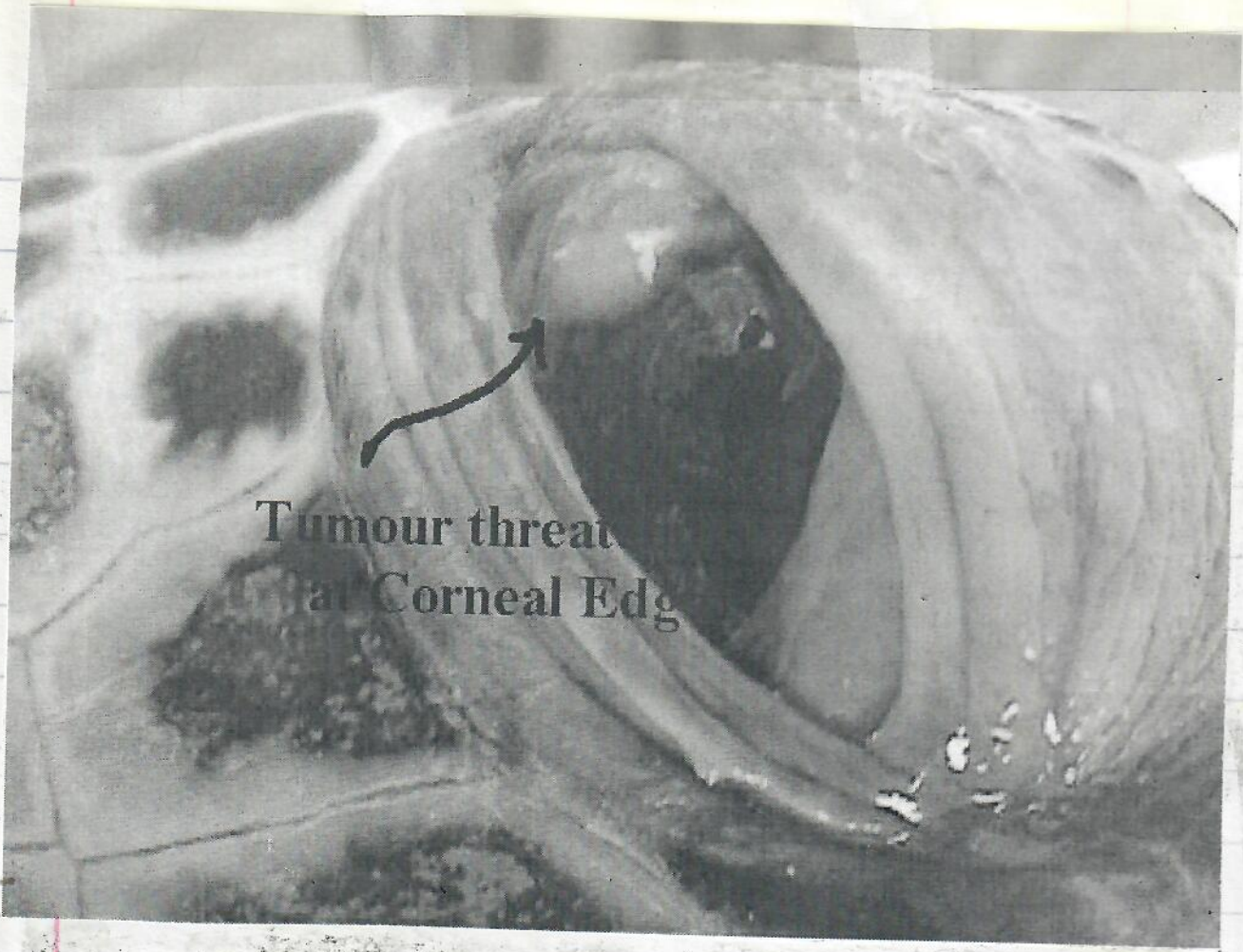


Pleats

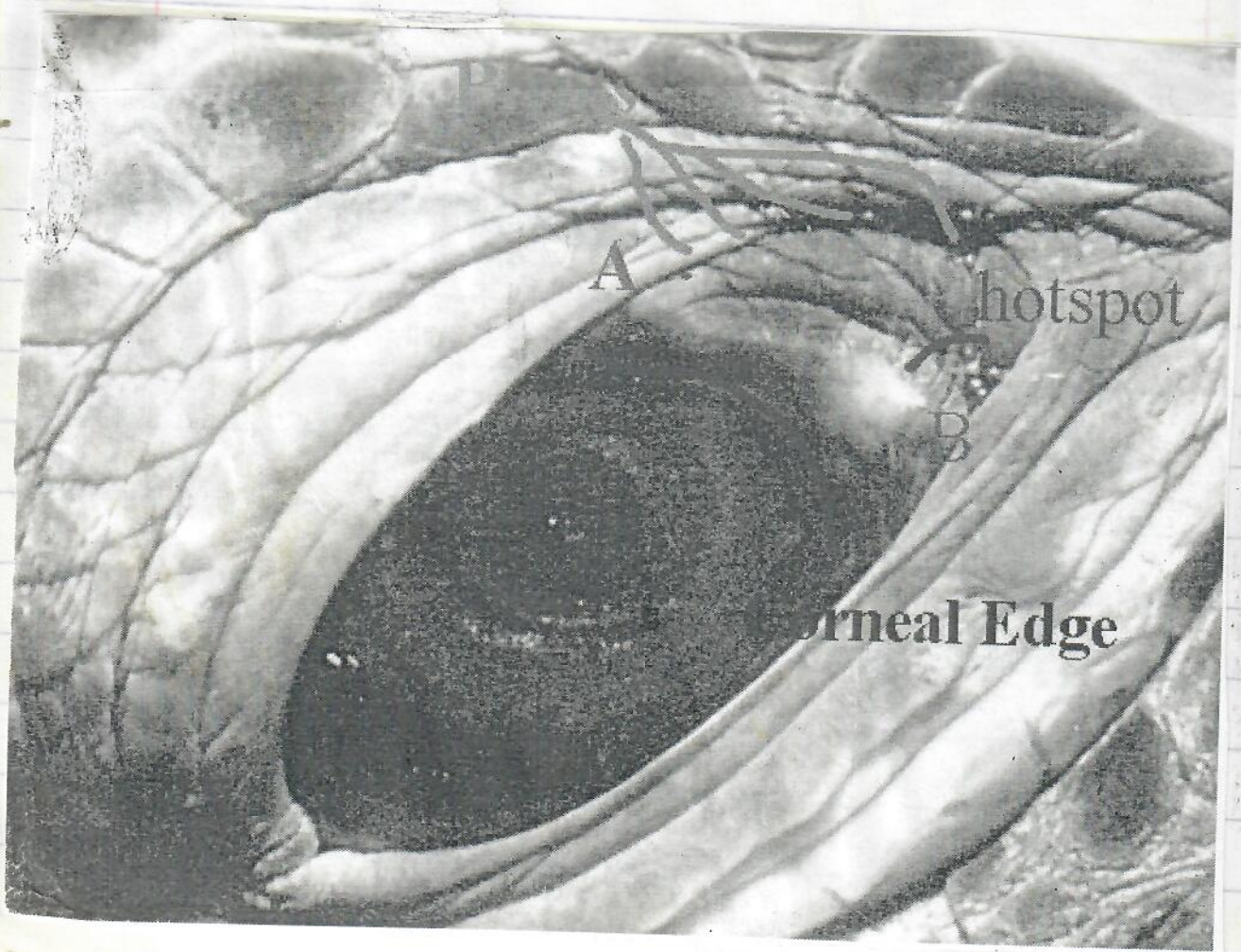
White veining



White veining along
Corneal Edge



Tumour threat
at Corneal Edge



A

hotspot

B

Corneal Edge

----- Forwarded message -----

Date: Sat, 30 Dec 2000 20:01:35 -0500
From: Ursula Keuper-Bennett <howzit@turtles.org>
To: "George H. Balazs" <gbalazs@honlab.nmfs.hawaii.edu>
Cc: Peter Bennett <honu@turtles.org>
Subject: Re: 100 tumored turtles from Kbay in a nutshell

George H. Balazs

>These are biological organisms, there is plasticity of growth,

Yessir. We call that "FP tracks". All here being compiled in 3-second video clips.

From the mildest FP case (only ever two very small eye tumours that both regressed in less than a year)

To catastrophic collapse (tumours barely discernible to a ghastly TS3 also in less than a year)

And everything in between.

All duly transferred and saved into Kaha ki'i. And now easy to call up --our very own version of time-lapse photography.

Not only do honu FP growth varies. It varies widely. Except for the kiddies.

andn I will ignore your comment about me that "what I wish the data to be" stuff. I am REPORTING to you what the data here IS. Says. And I've reached logical conclusions about it.

To review:

FP appears in the eyes first. *_____*

Eye tumours regress first. *_____*

Eye tumours leave scarring --that we call an "FP signature" (and that's no longer a hypothesis but pure observation)

Examining the eyes of a Hawaiian ohana will tell you more about what's happening with FP than any other test in the field. *_____*

I'll bet you a thousand US I'm right.

*Progress
Review 7)*

----- Forwarded message -----
Date: Sun, 31 Dec 2000 15:29:21 -0500
From: Ursula Keuper-Bennett <howzit@turtles.org>
To: "George H. Balazs" <gbalazs@honlab.nmfs.hawaii.edu>
Cc: Peter Bennett <honu@turtles.org>
Subject: Re: 100 tumored turtles from Kbay in a nutshell

*Mau
odur*

Morning, sir.

Now who's the one getting way way ahead of himself?

All I'm claiming is by looking at an eye I can tell if FP's incoming (way before there's a lump). If a honu has no tumours at all I can tell by looking at the eye if the honu's never had FP or is in fact a complete regression case.

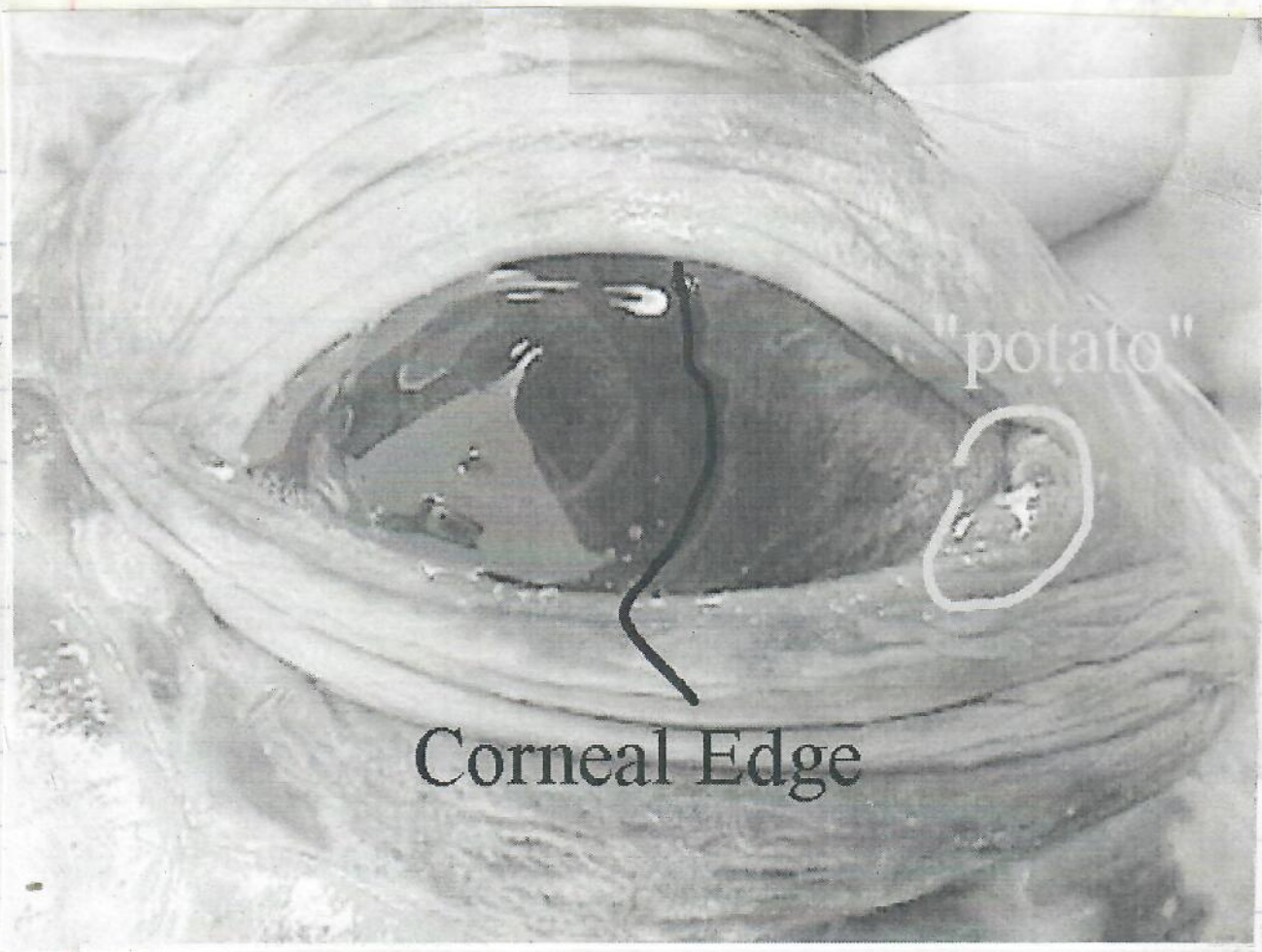
My current interest in eyes deals with where the eruption comes from in the eye. Does that affect potential for regression. That is, erupting from corneal edge, or connective tissue or conjunctiva?

I have no idea.

My interest in all this is not to determine who gets euthanized. But rather to use eye pics to get a "read" of the FP-ness of an area. A true read. Not one limited to percent of tumoured vs non-tumoured.

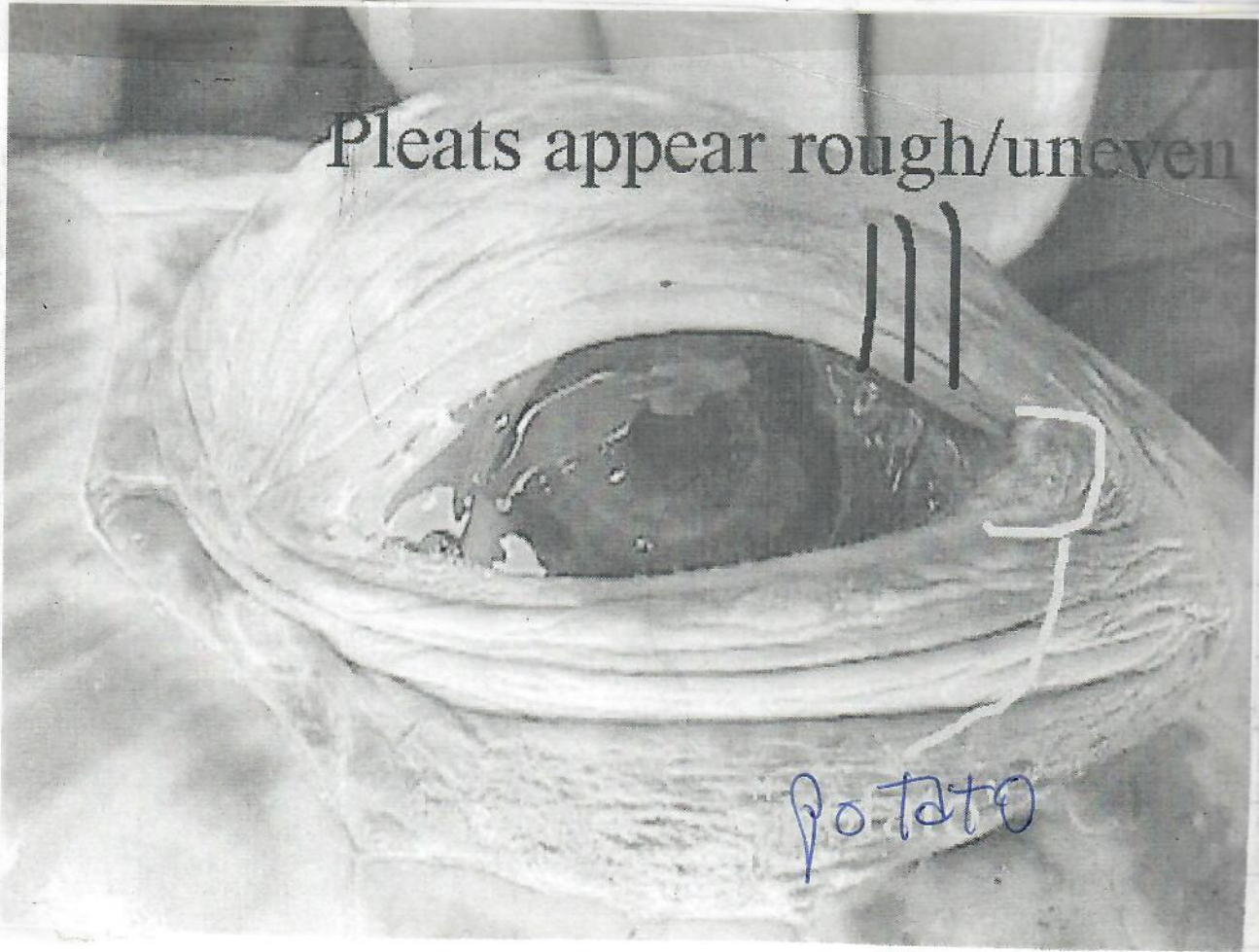
Which gives only a part of the disease dynamics of any area.

At 09:58 AM 12/31/00 -1000, George H. Balazs wrote:
>I see. Said the blind turtle (blinded by tumored). Sort of like genetic
>testing for cancers, etc. if that every comes to full frutrition for
>people. Test and find that person will not regress. So deny him or her 1)
>life insurance and longivity in employment, and 2) the level of medical
>care for a person we know will regress. Only for turtle, when we identify
>the ones that won't regress we put them to sleep and 1) save all taht
>suffering, 2) save higher infections rates in the wild to others from
>happening , and 3) save money on trying to cure those that won't cure,
>instead use the money for things with more potential for success.
>
>Sounds good. I think. As we all know, 1984 has come. And gone. George



Corneal Edge

"potato"



Pleats appear rough/uneven

Potato

----- Forwarded message -----

Date: Sun, 03 Dec 2000 21:46:34 -0500

From: Ursula Keuper-Bennett <howzit@turtles.org>

To: "George H. Balazs" <gbalazs@honlab.nmfs.hawaii.edu>

Subject: Re: your mail

now

Working all day (eyes tired)

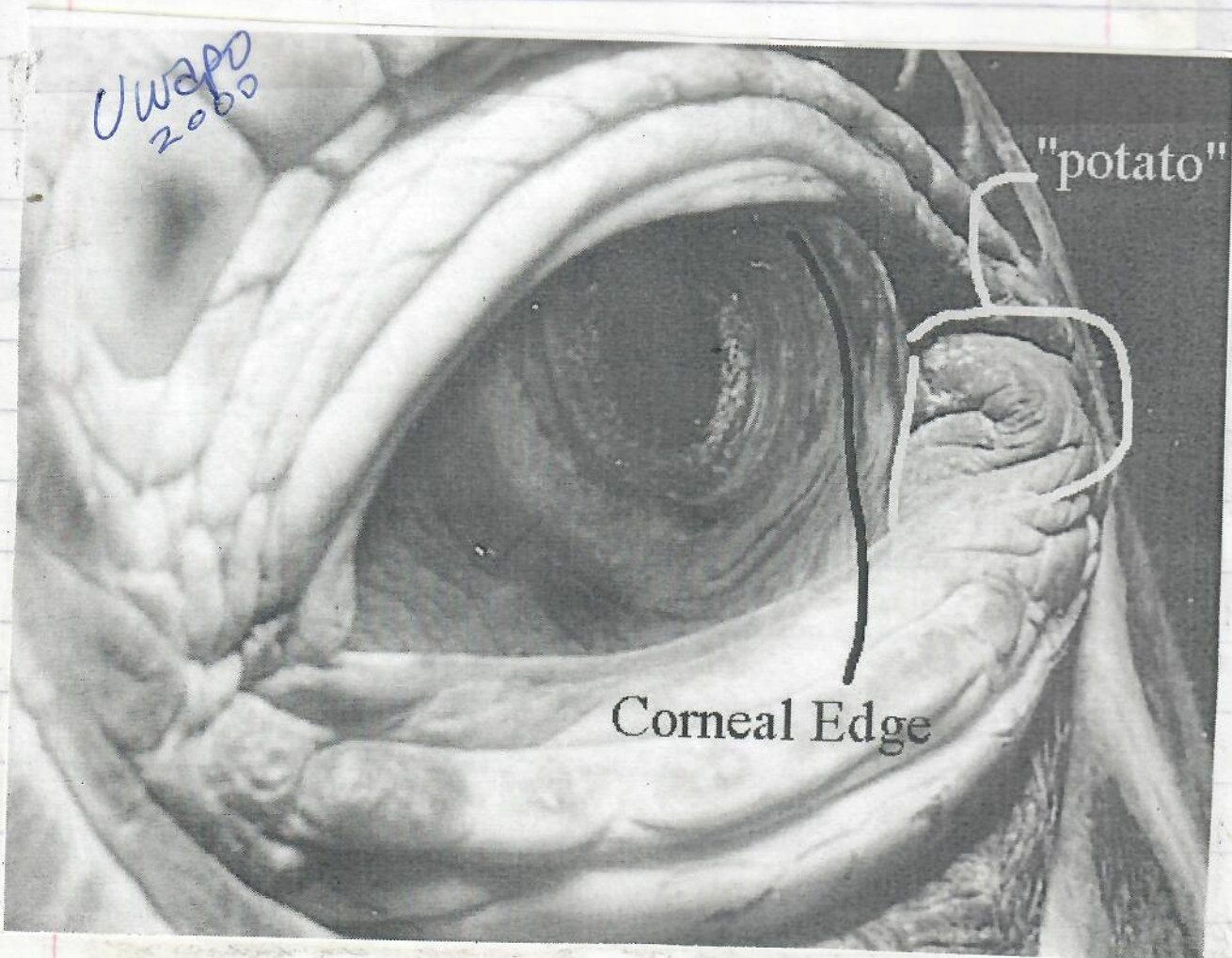
Here's the last of it. Uwapo is a confirmed regression case. You inspected her yourself on our last dive together. Summer before she was the honu resting with Keoki that magic moment.

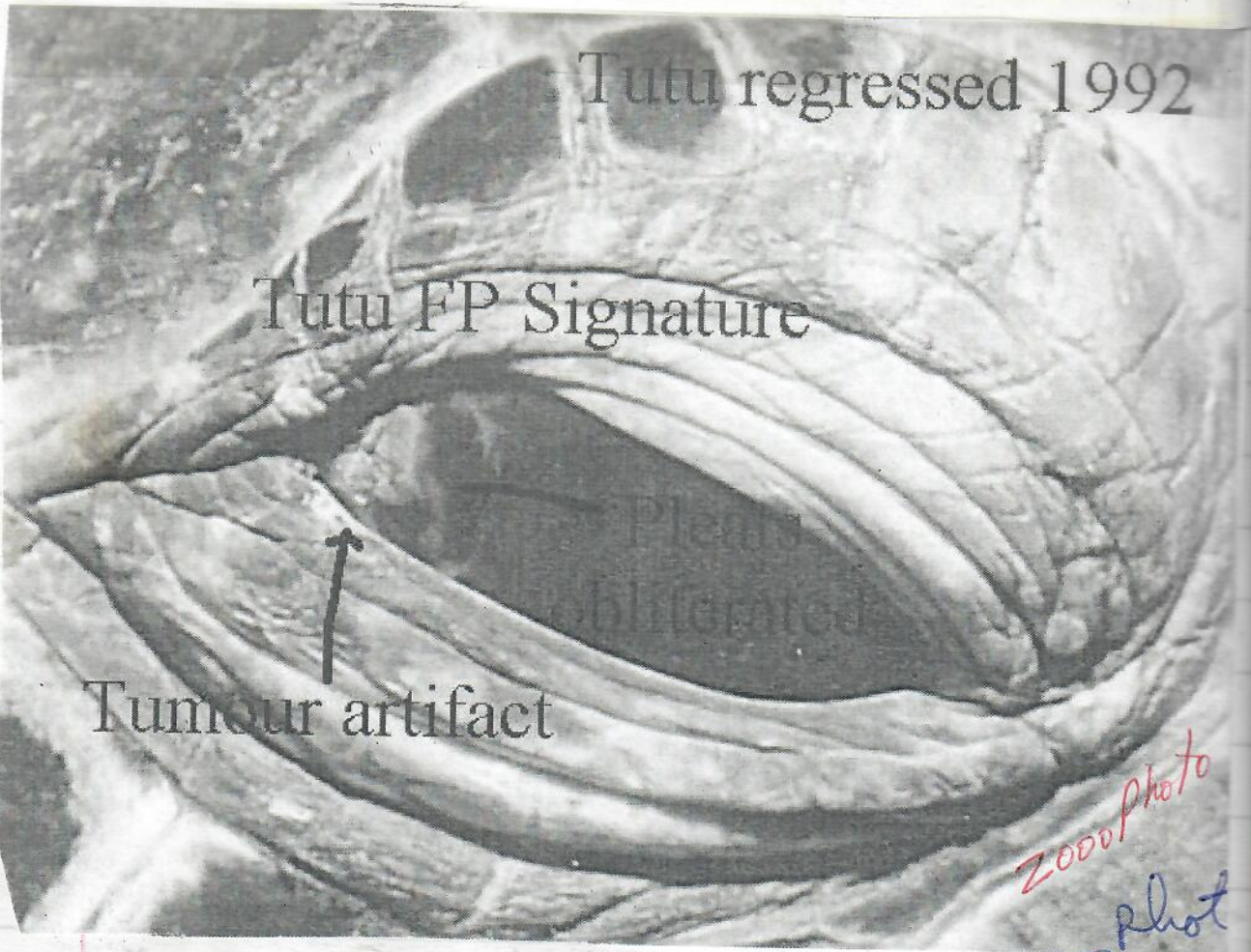
Other honu is Midway18 and hopefully you can see why I thought it might be a regression case. Might. There may be other reasons for "potatoes". But several regression cases we know have such.

Pau. 'night.

At 03:00 PM 12/3/00 -1000, you wrote:

- >Take and eye blow it up and draw in with arrows all the places you refer
- >to have names for. Sort of a whos-who in your eye terminology. You also
- >need to *you both need to come here) to see necropsy to look at excised
- >eye and tissues to see and to learn. And to teach me.





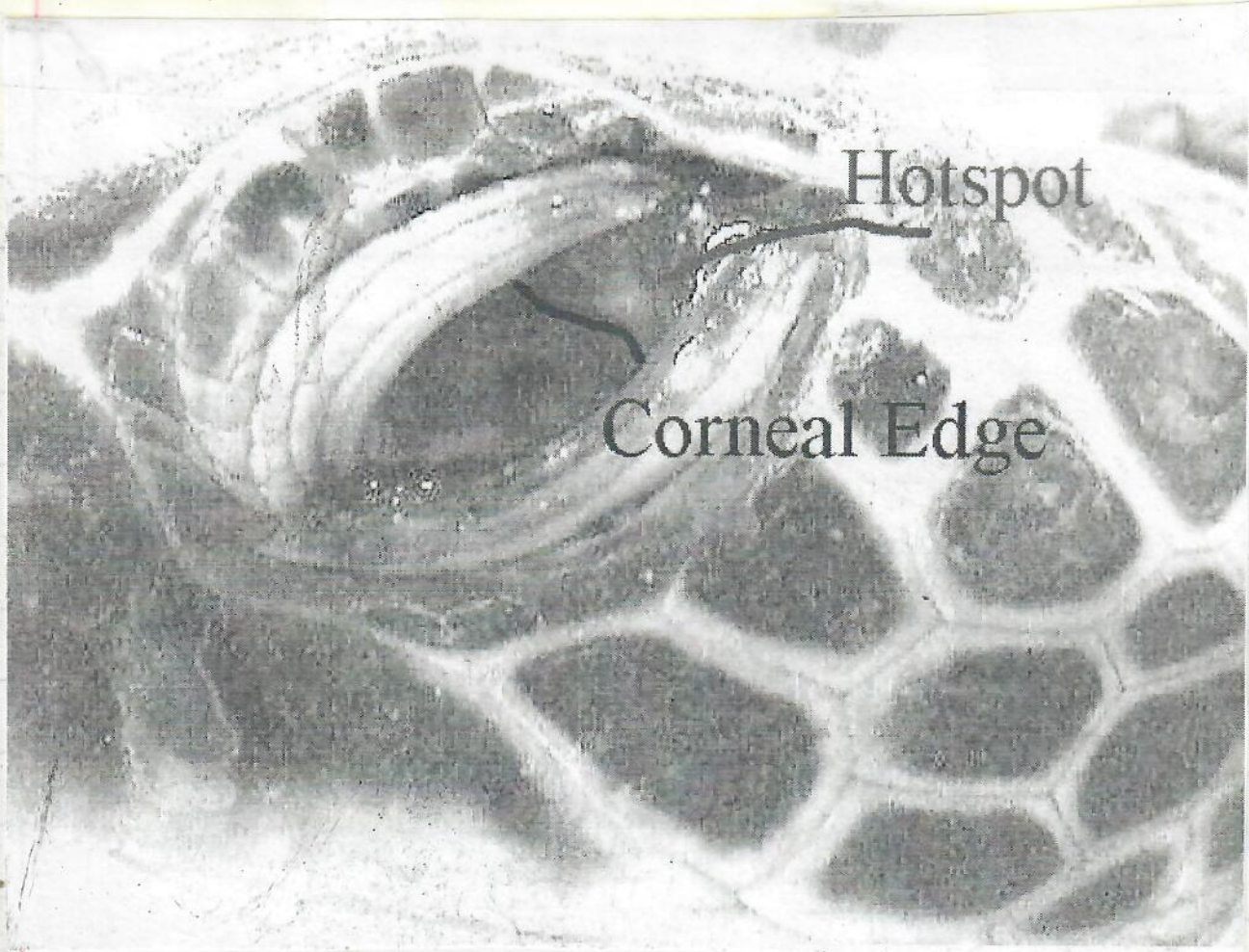
Tutu regressed 1992

Tutu FP Signature

Tumour artifact

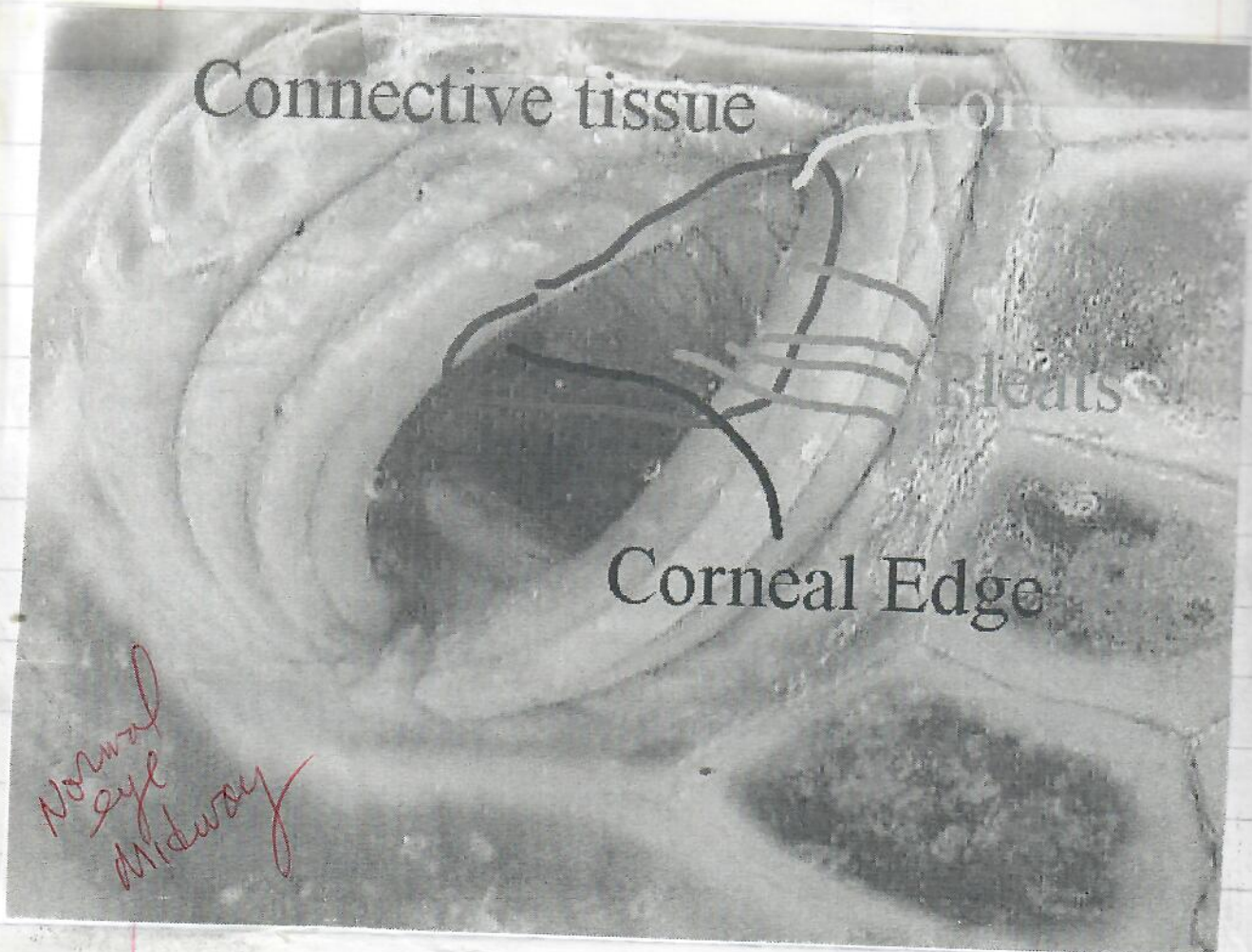
2000 photo

phot



Hotspot

Corneal Edge



Connective tissue

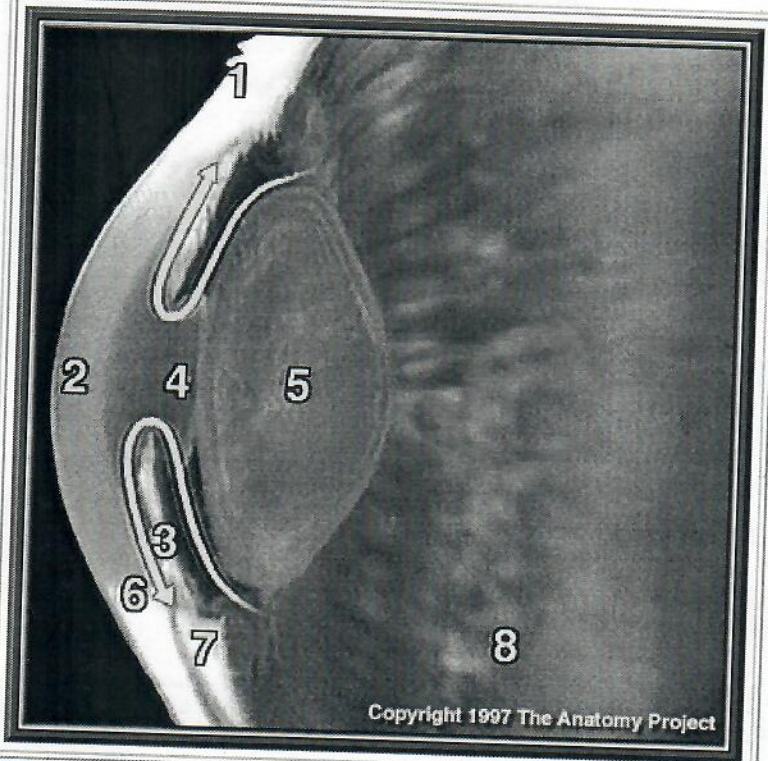
Pleats

Corneal Edge

*Normal
eye
Midway*

Atlas Images

Sagittal Section Through the Eyeball



- 1. Sclera
- 2. Cornea
- 3. Iris
- 4. Pupil
- 5. Lens
- 6. Limbus
- 7. Ciliary body
- 8. Ora serrata

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Basic Skills Workshops

Overview

Cervical Spine

EM Eye Care

Goals

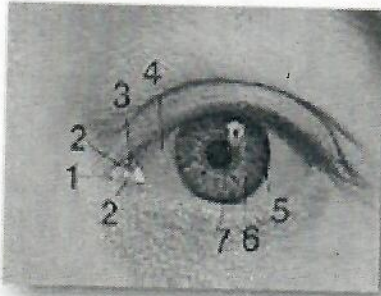
Guide

Workbook

Checklist

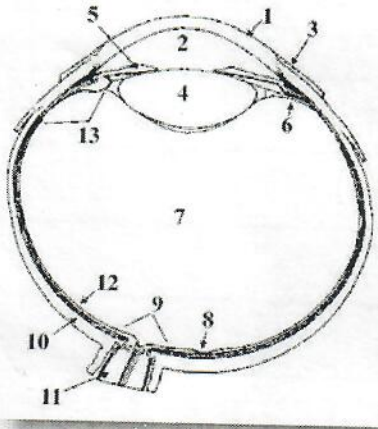
Answerbook

Anatomy



Please lable the numbered structures

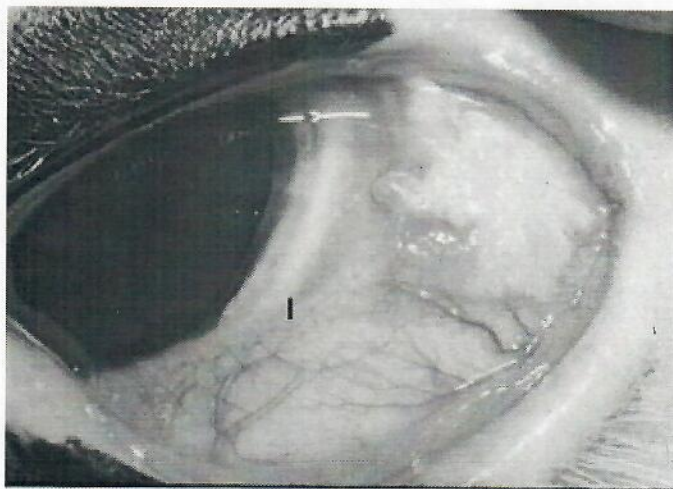
1. Lacrimal caruncle
2. Lacrimal papilla
3. Plica semilunaris
4. Sclera
5. Limbus (corneoscleral junction)
6. Iris
7. Pupil



Please lable the numbered structures

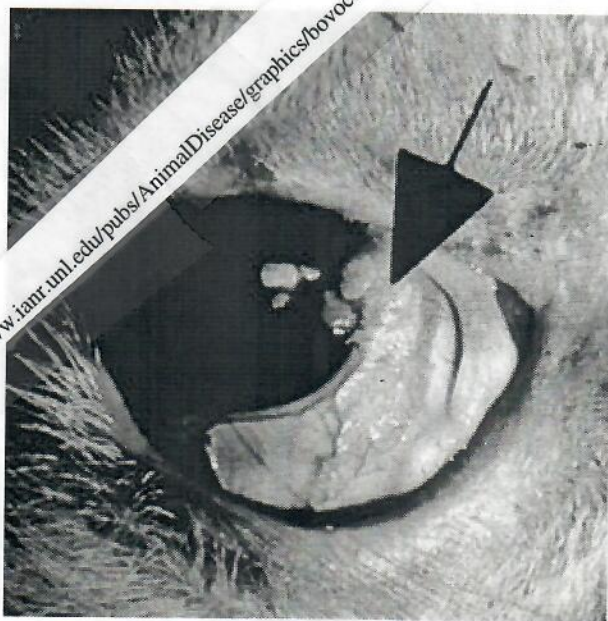
1. Cornea
2. Anterior Chamber
3. Conjunctiva
4. Lens
5. Iris
6. Ciliary muscle
7. Vitreous humor
8. Fovea
9. Optic disk
10. Choroid
11. Retina
12. Ciliary body
13. Ciliary body

JPEG image 333x266 pixels



Squamous cell carcinoma, conjunctiva, horse;
I - limbus

JPEG image 300x303 pixels



<http://www.ianr.unl.edu/pubs/AnimalDisease/graphics/bovoc1a.jpg>

The Cornea

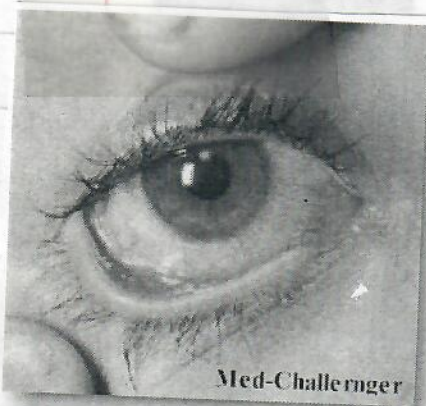
The transparent outer coat of the eyeball forming the anterior wall of the aqueous chamber is termed the cornea. It is avascular and composed of 5 layers.

Kerato (Greek = horn) is a prefix pertaining to the cornea hence keratitis is inflammation of the cornea. Keratitis may be caused by a variety of infectious, inflammatory, and systemic reasons.



Herpes Simplex Keratitis may appear like this.

Fluorescein stain causes a classic branching or dendritic pattern. It produces an acute infection of the corneal epithelium causing localized pain frequently with a foreign body sensation.

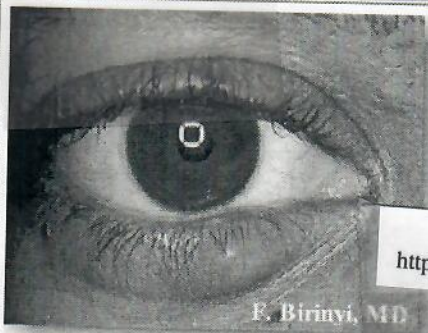


Most cases of conjunctivitis are bacterial. True or False

False most are actually viral but most should be treated as bacterial making sure that both eyes are treated simultaneously, even if only one eye is affected due to high probability of contamination to the other eye

Localized swelling of the conjunctiva (as pictured here) is called ?

Chemosis - conjunctival swelling from any cause, most commonly due to allergies.

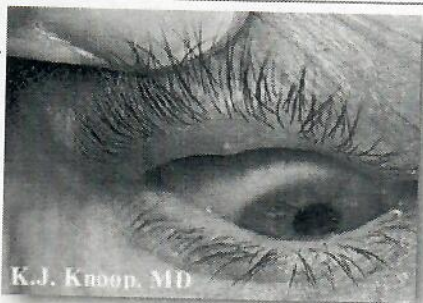


Localized swelling of the eyelid may be one of two entities.

What are these abnormalities called and how are they distinguished and treated?

Hordeolum - (external) or sty is an infection of the glands usually of Moll or Zeis by Staph aureus. Treatment is warm compresses, antibiotic ointment and possible incision if pointing.

<http://www.regionsem.org/education/workshop/eye/e-answers.html>



Hordeolum - (internal) Meibomian gland abscess, has the same treatment as the external.

Chalazion - is a nontender granulomatous inflammation of a Meibomian gland and may be distinguished by absence of acute inflammatory signs. May need excision by an ophthalmologist.

At 04:57 PM 11/25/00 -1000, you wrote:

>I'm going to call you on this. your first sentence is dogma. you can't
>say that as god's or anyone else's truth. that's a hypothesis. being
>tested. please, keep thinking of it that way please. Geo.

* George H. Balazs, Leader
* Marine Turtle Research Program
* National Marine Fisheries Service
* SWFSC Honolulu Laboratory
* 2570 Dole Street
* Honolulu, Hawaii 96822-2396 USA
* Tel: (808) 983-5733
* Fax: (808) 983-2902
* gbalazs@honlab.nmfs.hawaii.edu

>On Sat, 25 Nov 2000, Ursula Keuper-Bennett wrote:

>> Again in TS>0's no eye tumours almost always means regression. Then
>> ultra-close inspection of the eye will tell you if there's a tiny black
>> pearl or if there's no hint even of that, there should be an FP signature.
>> We've refined the Work/Balazs tumour scoring TSO or TSOR TSI or
>> TSIR TS2 or TSZR. Since no TS3 has ever regressed we don't have a TS3R.
>> As I mentioned previously, the importance of reading the eyes really shows
>> in your TSO's. In that class, you will find regression cases. For
>> example
>> when you dived with us, you saw Zeus, Tiamat, TAMU, Tutu. All have no
>> tumours. You'd call them TSO's. But they're not. They're TSOR's.
>> And that's an important distinction as Honokowai racks up more and more
>> regression cases. That's what I meant earlier when I said I was seeing
>> some exciting FP dynamics being hinted at. The problem is I'd have to go
>> through to get a good enough picture to do a paper on it.
>> That will require at least two years of analysis and gruntwork.
>> I can promise you one thing. If you are faithful in taking eye pics
>> (excellent stuff where the posterior connective tissue can be read) you
>> won't regret it.

>> At 12:19 PM 11/25/00 -1000, you wrote:
>> >I'm having my people pull out the last 100 different turtles we've caught
>> >in Kbay with TS>0 and compile data on ones with eye and ones not. A
>> >recent "snap shot" of what's happening. Oral also.

>> >On Sat, 28 Oct 2000, Ursula Keuper-Bennett wrote:
>> >> The fish. Yeah. Their role in all this. Another new species
>> >> Cleaning
>> >> This year. Suspected it for '99 but actually got footage this summer.
>> >> Job. One right now is to try and explain why honu in other areas
>> >> don't have
>> >> a 100% ocular tumours relationship.
>> >> Let me ask you something. This summer. Kbay. Was there a day
>> >> there when
>> >> you really worked honu, like grabbed and tumour scored at least 10,

----- Forwarded message -----

Date: Sun, 26 Nov 2000 09:37:32 -0500
From: Ursula Keuper-Bennett <howzit@curtles.org>
To: "George H. Balazs" <gbalazs@honlab.nmfs.hawaii.edu>
Subject: Re: Eye tumours

re: my first sentence, "Again in TS>0's no eye tumours almost always means regression." being "dogma".

DOGMA: c : a point of view or tenet put forth as authoritative without adequate grounds

"without adequate grounds"? That sentence is based on observing (analyzing) 248 tumoured honu, on watching over a period of years how regression works in in 40 confirmed regression cases, and another 46 suspected regression cases (most of which we can't confirm because we don't have a second season sighting on them).

Something else --"Again in TS>0's no eye tumours almost always means regression." is NOT the hypothesis as you suggest, but the CONCLUSION --the result of very careful observations over time on individual turtles. Sentence One is NOT the hypothesis and will not be treated as such in our paper. It's the CONCLUSION.

We DO have a hypothesis as a RESULT of the conclusion. A reminder --here it is.

If the observations for Honokowai apply to other Hawaiian sites, it is possible to get a quick and accurate assessment of TRUE FP prevalence by examining honu eyes.

THAT'S what we're testing, not sentence one.

Your caution "keep thinking of it that way please" --I hear your voice in my head all the time. Urging "good science", careful work. I hear you all the time when I work these tapes here.

We know your name will be on this paper. You have to understand that because of that I am CAREFUL about every little thing that will go into it. See, we want you on the next paper. And the next. And the next.

And I'll keep thinking that way. That's what good science is.

```

>> preferably about 15-20?
>> -----
>> At 09:56 AM 10/28/00 -1000, you wrote:
>> >yes surely, and fish eating them off. removal of tissues, the fish are
>> >good for reducing tumor load.
>>
>> *****
>> * George H. Balazs, Leader
>> * Marine Turtle Research Program
>> * National Marine Fisheries Service
>> * SWFSC Honolulu Laboratory
>> * 2570 Dole Street
>> * Honolulu, Hawaii 96822-2396 USA
>> * Tel: (808) 983-5733
>> * Fax: (808) 983-2902
>> * gbalazs@honlab.nmfs.hawaii.edu
>> * *****
>> >On Sat, 28 Oct 2000, Ursula Keuper-Bennett wrote:
>> >> Mahalo.
>> >> Back in 1994 or perhaps it was '95 I saw a honu "flipper" its
>> >> cheek, hit its right eye and send "milk" into the water. I assumed
>> >> somehow it
>> >> had
>> >> burst some of the tumour and the 'milk' was pus or something.
>> >> That particular honu gesture could explain in part some of the eye
>> >> tumours
>> >> > getting torn off.
>> >> -----
>> >> At 09:26 AM 10/28/00 -1000, you wrote:
>> >> >eye tumors are like eyes. they have a range of textures and
>> >> densities
>> >> >etc. Basically they cover the same range as a tumor fp anywhere
>> >> else on
>> >> >the turtle. (except external).
>> >> *****
>> >> * George H. Balazs, Leader
>> >> * Marine Turtle Research Program
>> >> * National Marine Fisheries Service
>> >> * SWFSC Honolulu Laboratory
>> >> * 2570 Dole Street
>> >> * Honolulu, Hawaii 96822-2396 USA
>> >> * Tel: (808) 983-5733
>> >> * Fax: (808) 983-2902
>> >> * gbalazs@honlab.nmfs.hawaii.edu
>> >> * *****
>> >> >On Thu, 26 Oct 2000, Ursula Keuper-Bennett wrote:
>> >> >> I've never touched a tumour. Eye tumours. Are they hard?
>> >> >> I just watched an interesting behaviour regarding an eye
>> >> tumour. Is it
>> >> >> hard or filled with fluid? Does it vary? I really have no
>> >> >> idea.

```

----- Forwarded message -----
Date: Thu, 30 Nov 2000 07:40:06 -0500
From: Ursula Keuper-Bennett <howzit@turtles.org>
To: "George H. Balazs" <gbalazs@honlab.nmfs.hawaii.edu>
Cc: Peter Bennett <honu@turtles.org>
Subject: Life, the Universe, Everything

Yes, that is my understanding. Prevalence "number of cases over a given time"

Over here we deal mainly with prevalence. And the given Time is 1988 through 2000. I just checked my Taber Medical Dictionary and it just says, "given time". That should also mean any time you want. Not just that day. In fact the only way to determine incidence is to first have a handle on prevalence.

I agree completely with what you wrote below. And that's the point.

In fact we'll be using your dives with us (1998, 1999 and 2000) as examples of how a "snap shot" does not give a researcher a true picture of FP.

You see a moderate 60% or so tumour rate with mostly TS1's limited to ocular involvement. FP isn't that bad... nice fat honu. Sure there's that one TS3 but...

George if honu stay around Honokowai long enough they get FP. (And we can back up that statement with numbers)

And if our latest regression calls are correct, regression in the larger size class is significantly higher than what we reported at South Padre. We will be making that point.

But for the kiddies we get the same grim story. Regression holding at 5% and Kama'hao was already a fair-sized honu. That's HIDEOUS. Think if some new human disease happened where adults fared ok but all save 5% of children died.

And that's what FP is.

You don't get an accurate read if you aren't trying to determine what the non-tumoureds are. And (now this is only hypothesis!) the longer a site has been an FP site the lower prevalence it will appear to have because the regression cases stay. And those animals build up the percents "healthy".

You drop into the water for the very first time. You see honu. Some tumoured.

Is an area a NEW FP site, where the contagion's essentially just arrived? Two, three years?

Or is FP a long time resident? Well over a decade --more like Honokowai?

The only way to tell is by reading the eyes.

And ultimately George, we believe, reading the eyes is the only way to understand how FP works in an area. Until you have some blood work that can tell if a honu has had FP.

(Ball grazes the top of the net and lands shallow in your court) Your turn.

At 10:59 PM 11/29/00 -1000, you wrote:

>Prevalence in disease parlance is a snap shop of what it is at a given
>time. Incidence is the number of new case over time. Not static.

>Unfortunately, GB and even others have misused the word on occasion,
>verbally and in writing. The number of cases in 1999 at a place can't

>have in the current count cases that happened 5 years ago but are not
>longer active (sick animals). That's the way I view it, understand it.

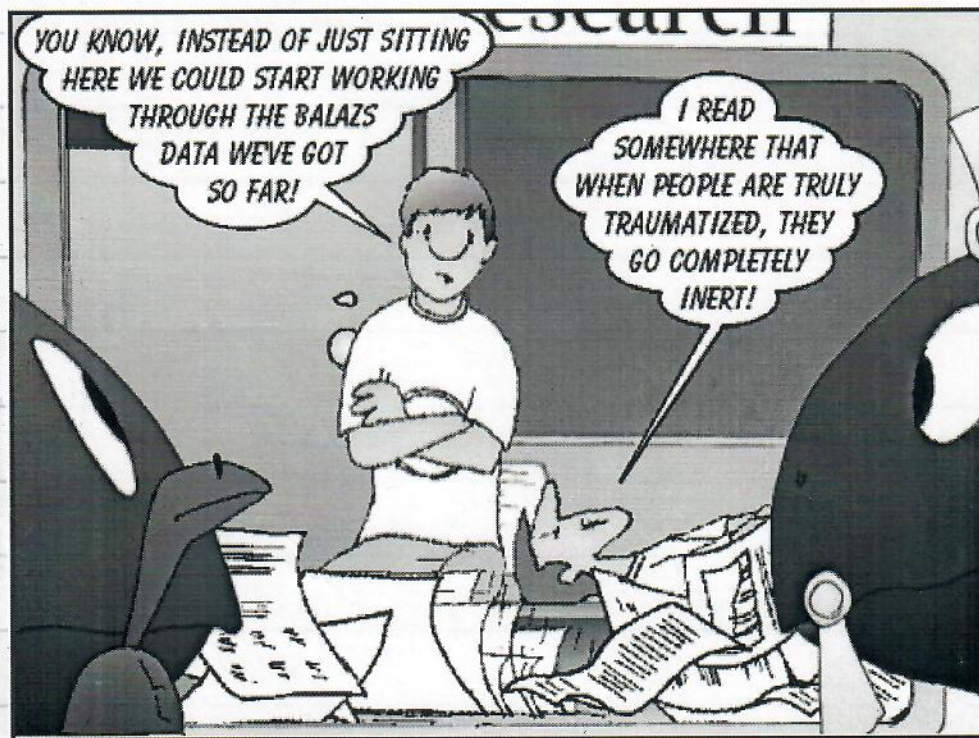
>And certainly that seems reason. So, you can't say there's a 100%

>prevalence of fp at Honokowai, when XX% of those cases really aren't
>cases but old itchy scars from former Chicken Pox (I mean fp).

>
>Your turn.



Ted's Stationary Reaction



This series of toons describes the adventures of the turtles as George develops a webcam system for observing human behaviour. For news about a different kind of sea turtle webcam, see our [SeaTurtleCam](#) page.

The *Turtle Trax* Toon is conceived and drawn by howzit@turtles.org (Ursula Keuper-Bennett).



Panel 2: 91K JPEG



1999
EXCAVATIONS
ONE
TURTLE
(HAWKSBILL)
ON
NESTED ON
MAUI
ID CODE
TO PELEKUNA
VALLEY
N. MOLOKAI

WAIHOLI NEST #1 (28 June 1999)
Latitude: 20° 45'15" N Longitude: 156° 27' 36" W
EMERGENCE: Monday 23 August 1999 (Day 55)
EXCAVATION: Thursday 26 August 1999 (Day 58)
(Revised Sh 9/7/99)

SUMMARY

Excavation by Skippy Hau & Glynnis Nakai

Data Recorded by Hannah Bernard

Nest diameter 22 centimeters; depth 42 centimeters

EMPTY SHELLS 105
UNDEVELOPED/PARTIAL 71
ABNORMALLY LARGE SHELL 2
FULLY DEVELOPED IN EGG (DEAD) 1
DEAD IN SHELL 7

LIVE HATCHLINGS (RELEASED) 90 (ADDED ONE ABNORMALLY LARGE EGG WITH NORMAL SIZED HATCHLING)
DEAD HATCHLING 2

ESTIMATED TOTAL 186 (103/186=55%)

WAIHOLI NEST #2 (18 July 1999)
Latitude: 20° 45'17" N Longitude: 156° 27' 44" W
EMERGENCE: Monday 23 September 1999 (Day 57)
EXCAVATION: Wednesday 29 September 1999 (Day 73)
(Draft September 29, 1999)

SUMMARY

Excavation by Glynnis Nakai

Data Recorded by Steve Williams

Nest diameter 32 centimeters; depth 51 centimeters

EMPTY SHELLS 34
WHOLE EGGS 190

LIVE HATCHLINGS (RELEASED) 4 (Four released; two died)

DEAD HATCHLING 26

ESTIMATED TOTAL 224 ((34-26)/224=5%)

ONE LARGE OVERSIZED EGG; Full of buffel grass roots, even at bottom of nest. Dead hatchlings mostly found at top of nest. Empty shells mostly found near bottom of nest. One "white egg" contained a live hatchling in shell; animal kept in sand in dark at DAR Office. Saturday, October 2nd, hatchling was dead.

WAIOHULI NEST #3 (8 August 1999)
Latitude: 20° 45'18" N Longitude: 156° 27' 45" W
EMERGENCE: Friday 1 October 1999 (Day 55)
EXCAVATION: Wednesday 6 October 1999 (Day 60)
(Draft October 7, 1999)

SUMMARY

Excavation by Skippy Hau

Data Recorded by Steve Williams

Nest diameter 31 centimeters; depth 51 centimeters
(first hatchling 13.5 centimeters below surface)

EMPTY SHELLS
WHOLE EGGS

119
57

LIVE HATCHLINGS (RELEASED)

52 (two live in shell)

DEAD HATCHLING

9

ESTIMATED TOTAL

176
(119-14)/176=60%

Nest was damp on bottom; count includes three larger than normal eggs
(double and triple sizes).

*One dead hatchling found in the area during excavation and four found by
Hawaii Wildlife Fund volunteers during nest watch prior to excavation.

** Two weak hatchlings kept in office overnight; one died and other weak
hatchling released next morning.

WAIOHULI NEST #4 (28 August 1999)
Latitude: 20° 45'17" N Longitude: 156° 27' 45" W
EMERGENCE: Tuesday 26 October 1999 (Day 60)
EXCAVATION: Saturday 30 October 1999 (Day 64)
November 1, 1999

SUMMARY

Excavation by Glynnis Nakai & Skippy Hau

Data Recorded by Hannah Bernard

Nest diameter 22 centimeters; depth 49 centimeters

EMPTY SHELLS

177

Undeveloped/partially dev. eggs

19

Deformed larger than normal

2

Two eggs attached

2

Dead in shell

2

LIVE HATCHLINGS (RELEASED)

19 (released)

Dead Hatchling

1 (Kim Brown & Allan Ligon 10/27/99)

ESTIMATED TOTAL

202 ((177-1)/202=87%)

First live hatchling at 17 centimeters below surface. First dead in shell
about 22 centimeters. Roots encountered near surface to the middle of
nest. Bigger roots near egg chamber. Sand was mainly dry but wet in the
middle of the nest. (Witness appears to be from heavy rainfall on
Wednesday, 20 October 1999.)

Hawthorn

Sept 1999

WAIOHULI NEST #5 (19 September 1999)

Latitude: 20° 45'15" N Longitude: 156° 27' 47" W

EMERGENCE: None

EXCAVATION: Monday November 29, 1999 (Day 72)

Revised on December 4, 1999

SUMMARY

Excavation by Glynnis Nakai & Skippy Hau
Time 17:02 to 17:40 (main 17:05 to 17:25)
Nest diameter 28 centimeters; depth 39 centimeters

ESTIMATED EMPTY SHELLS	154
WHOLE EGGS (UNDEVELOPED/UNHATCHED)	10

=====	
LIVE HATCHLINGS (RELEASED)	157
WEAK HATCHLING DIED AFTER 5 DAYS	1
WEAK HATCHLING HELD FOR 5 DAYS & RELEASED	1

ESTIMATED TOTAL 169 (158/169=93%)

After excavating nest four on 30 October 1999, we inspected the fifth nest and found the nest was disturbed. It appears a mongoose may have reached the top part of the nest. Sand and a wire mesh was placed above nest. An unknown amount of eggs may have been taken from the top part of the nest.

Found wire mesh and plastic lawn edging placed around nest (Nov. 13, 1999). A path was cleared to ocean from nest. We observed disturbance depressions in sand before excavation. Appears to be displacement of sand by hatchlings. First live hatchling about 16 centimeters below surface. Second hatchling with pea sized egg yolk; not fully formed right front flipper and right hind flipper. Two weak hatchlings held overnight. Tried to release one hatchling at shoreline but was washed up by waves.

Deformed hatchling died and weak hatchling strong enough to be released near nest site on Saturday 4 December 1999 (day 77).

*Dead hatchling in shell preserved for Vic Honda (NMFS Enforcement) for educational purposes.

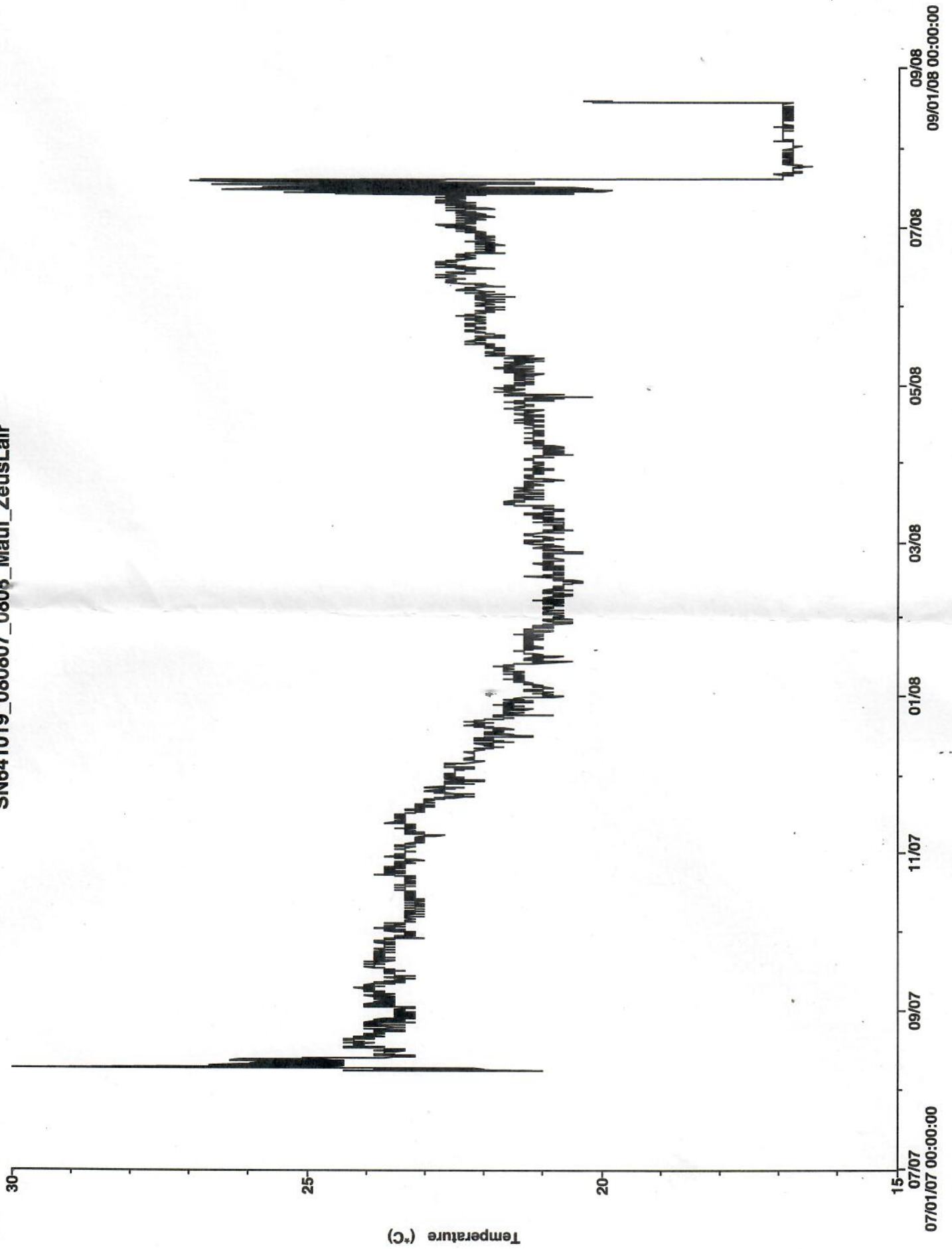
Honolulu Sept 1999

WAIOHUU NEST #5 (19 September 1998)

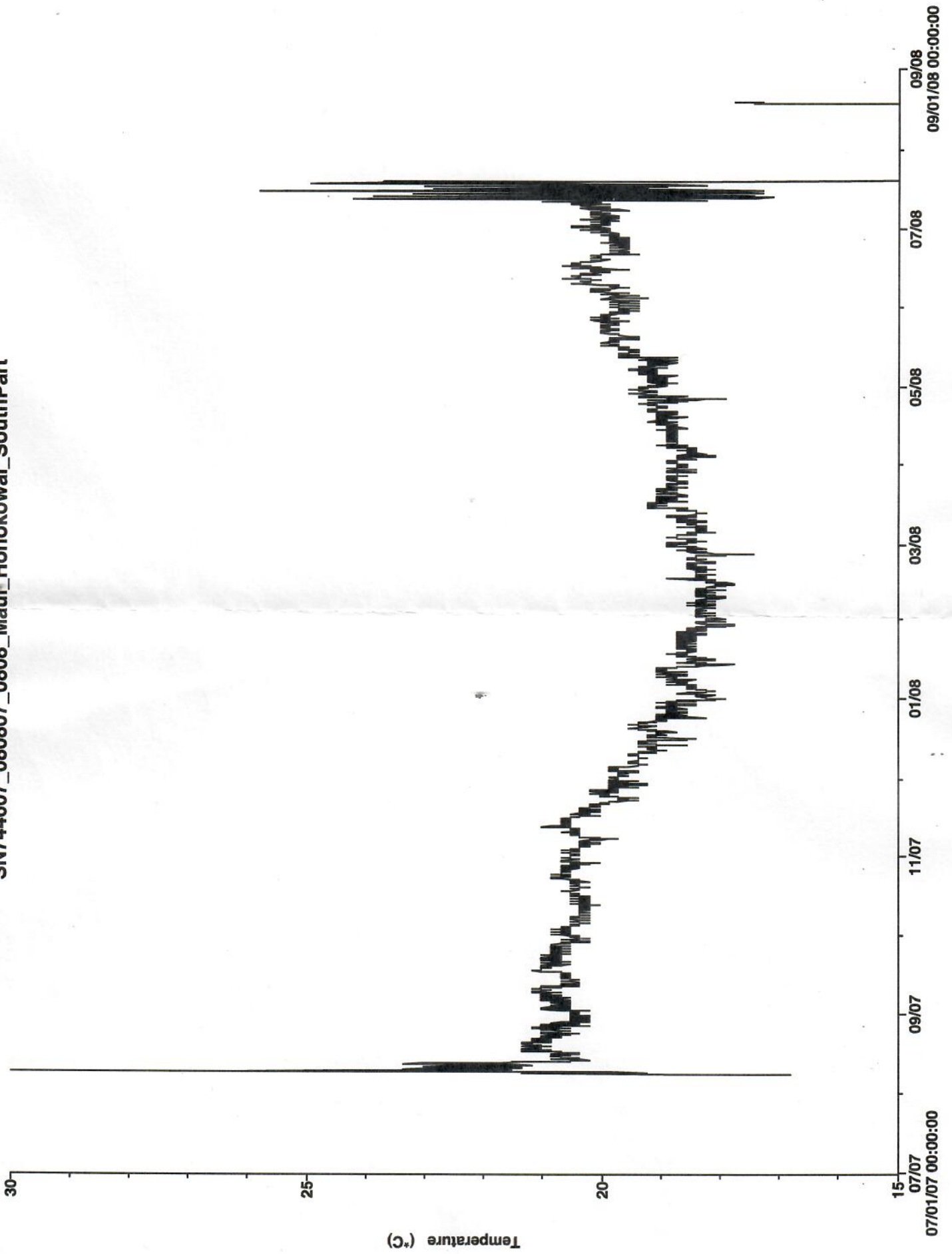


Dead hatching in shell preserved for Vic Honda (NMFS Entomologist) for educational purposes.

SN641019_080807_0808_Maui_ZeusLair



SN744607_080807_0808_Maui_Honokowai_SouthPart



Date: Thu, 15 Feb 2001 06:33:49 -0500
From: Ursula Keuper-Bennett <howzit@turtles.org>
To: "George H. Balazs" <gbalazs@honlab.nmfs.hawaii.edu>,
Peter Bennett <honu@turtles.org>
Subject: Re: Good news / Bad News (fwd)

That's what the photos told us. Read my message January 24, 1999. Note comment about RFF.

>Date: Sun, 24 Jan 1999 15:33:51 -0500
>To: "George H. Balazs" <gbalazs@honlab.nmfs.hawaii.edu>
>From: Ursula Keuper-Bennett <howzit@turtles.org>
>Subject: 4800 right profile pics
>
>Pics of right profiles you sent to Peter were shared with me only today
>and only after several prompts of "Are you sure George never sent you
>those images?"
>
>No match. Certain.
>
>Find the pics odd when compared to shots you took of her left at East.
>
>Tumour right eye, yet East pic hinted that left eye was clean. Course
>we've had several honu who've had one eye erupt well before the
>other. Kaula is just our most recent example.
>
>Can you tell by comparing her right side photos at East whether her RT EYE
>tumour has gotten larger? (Now this is just me and all but just using
>photo-interpretation experience this looks to be a turtle GETTING FP, not
>regressing as I'd first hoped.)
>
>Hate to mention this but pic shows what we used to call "salt and pepper"
>on the right shoulder anterior. This used to refer to very tiny (just
>detectable) white spots that weren't quite raised or large enough for us
>to call a "tumour".
>
>But now I can't use that term any more. An early Clingon colony (less
>than a dozen) looks exactly like S&P in a photo with any distance in it.
>
>That's why 4800 looks like she has. Either tumours erupting on RF
>shoulder or early Clingons. Course it could also just be white spots that
>go nowhere (happily, that's happened too).
>
>I hope she transmits a very long time for you.

See next message.

At 07:07 PM 2/14/01 -1000, George H. Balazs wrote:
>fyi with depression. Geo.

>
>----- Forwarded message -----
>Date: Wed, 14 Feb 2001 19:05:06 -1000 (HST)
>From: George H. Balazs <gbalazs@honlab.nmfs.hawaii.edu>
>To: RMILLERIMAGES@cs.com
>Subject: Re: Good news / Bad News

>
>Oh God, what terrible news, I'm so sad to hear this. Where was she seen?
>No question about it being her, had the smoothed of transmitter with no
>antenna? What about the eyes, tumors larger on the eyes? Aloha and
>Mahalo Randy, George

>-----
>On Wed, 14 Feb 2001 RMILLERIMAGES@cs.com wrote:

>
> > The good news is that I saw #4800 on Friday, the bad news is that she
> looks
> > bad.
> > She is missing left rear flipper, big chance missing out of her left front
> > flipper, large tumor on left shoulder. I am so sad to see our old
> friend in
> > such shape.
> > I got some good photos, I will send them soon. Any special address to
> mail to?

Subject: Re: Good news / Bad News (fwd)

Date: Thu, 15 Feb 2001 16:34:49 -1000 (HST)

From: "George H. Balazs" <gbalazs@honlab.nmfs.hawaii.edu>

To: George Balazs2 <gbalazs@s360.swfc2.nmfs.gov>

```

*****
*           George H. Balazs, Leader           *
*   Marine Turtle Research Program           *
*   National Marine Fisheries Service       *
*   SWFSC Honolulu Laboratory               *
*   2570 Dole Street                         *
*   Honolulu, Hawaii 96822-2396 USA         *
*   Tel:(808) 983-5733                       *
*   Fax:(808) 983-2902                       *
*   gbalazs@honlab.nmfs.hawaii.edu         *
*****

```

----- Forwarded message -----

Date: Thu, 15 Feb 2001 21:24:28 -0500

From: Ursula Keuper-Bennett <howzit@turtles.org>

To: "George H. Balazs" <gbalazs@honlab.nmfs.hawaii.edu>

Subject: Re: Good news / Bad News (fwd)

4800

Here you go.

I know. Blurry. But this is ultra-magnification. You can still see well enough though. RTEYE tumour looks to have erupted from corneo-sclera junction. Mouth tumour peeking RJH.

Second image. Right side of neck. Tumour pre-cursor for sure. Also four hotspots but not sure about that. Could be beginning of tumour lei. Certainly she'll have one where the pre-cursor is.

And this of RFF was very obvious when I first analyzed this pic Jan 1999. Two white spots much like Polzbarney had. Watch. Randy's latest pics will show the large tumour from those two pinpricks.

It was all there in that photo well over a year ago.

Can read the eye better now. Embarrassed to have missed the mouth tumour back then. It was obvious from this pic. Careless of me.

At 03:59 PM 2/15/01 -1000, you wrote:

>yes please, anything like that would be helpful.

```

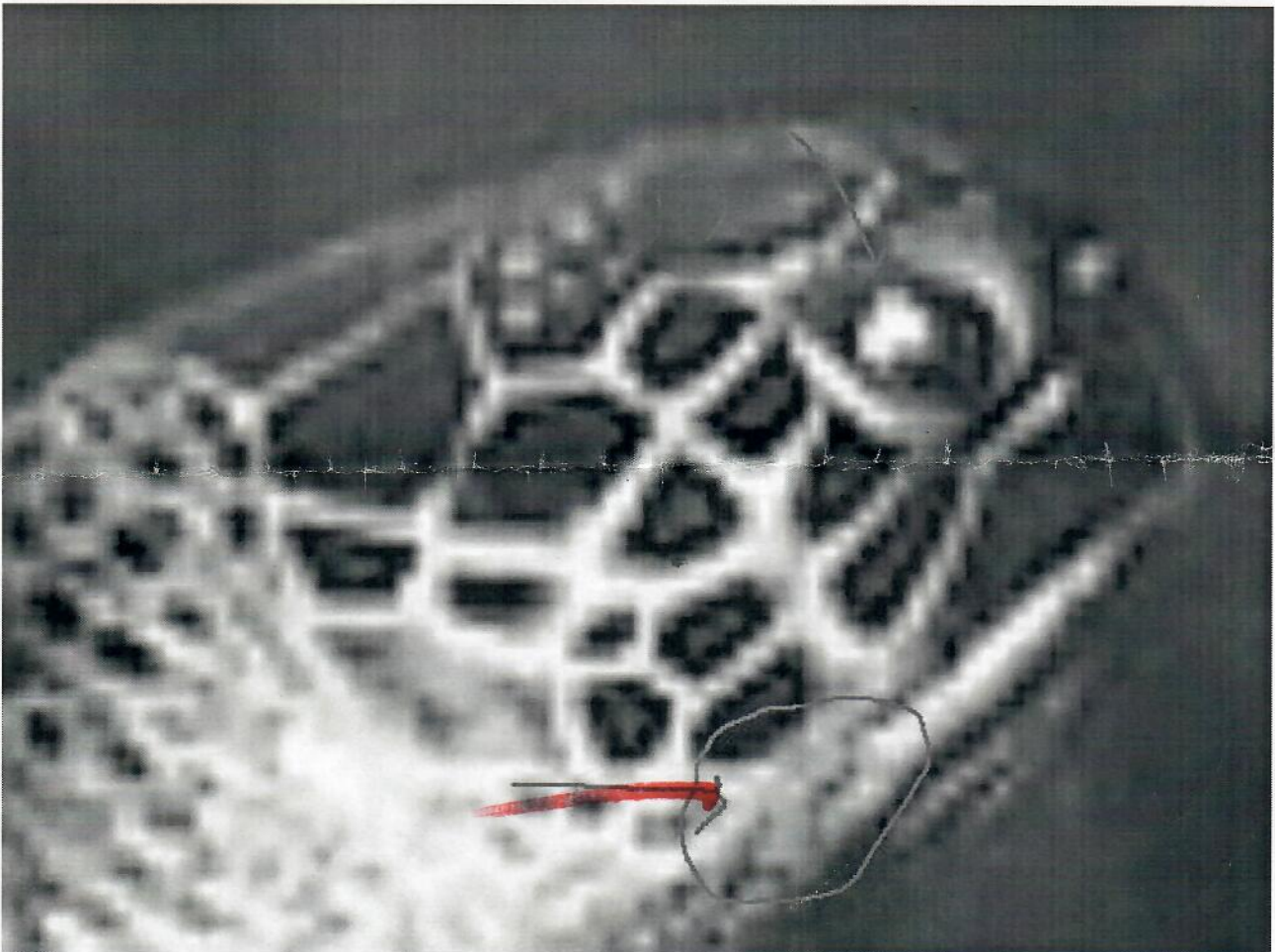
>
> *****
> *           George H. Balazs, Leader           *
> *   Marine Turtle Research Program           *
> *   National Marine Fisheries Service       *
> *   SWFSC Honolulu Laboratory               *
> *   2570 Dole Street                         *
> *   Honolulu, Hawaii 96822-2396 USA         *
> *   Tel:(808) 983-5733                       *
> *   Fax:(808) 983-2902                       *
> *   gbalazs@honlab.nmfs.hawaii.edu         *
> *****
>
>

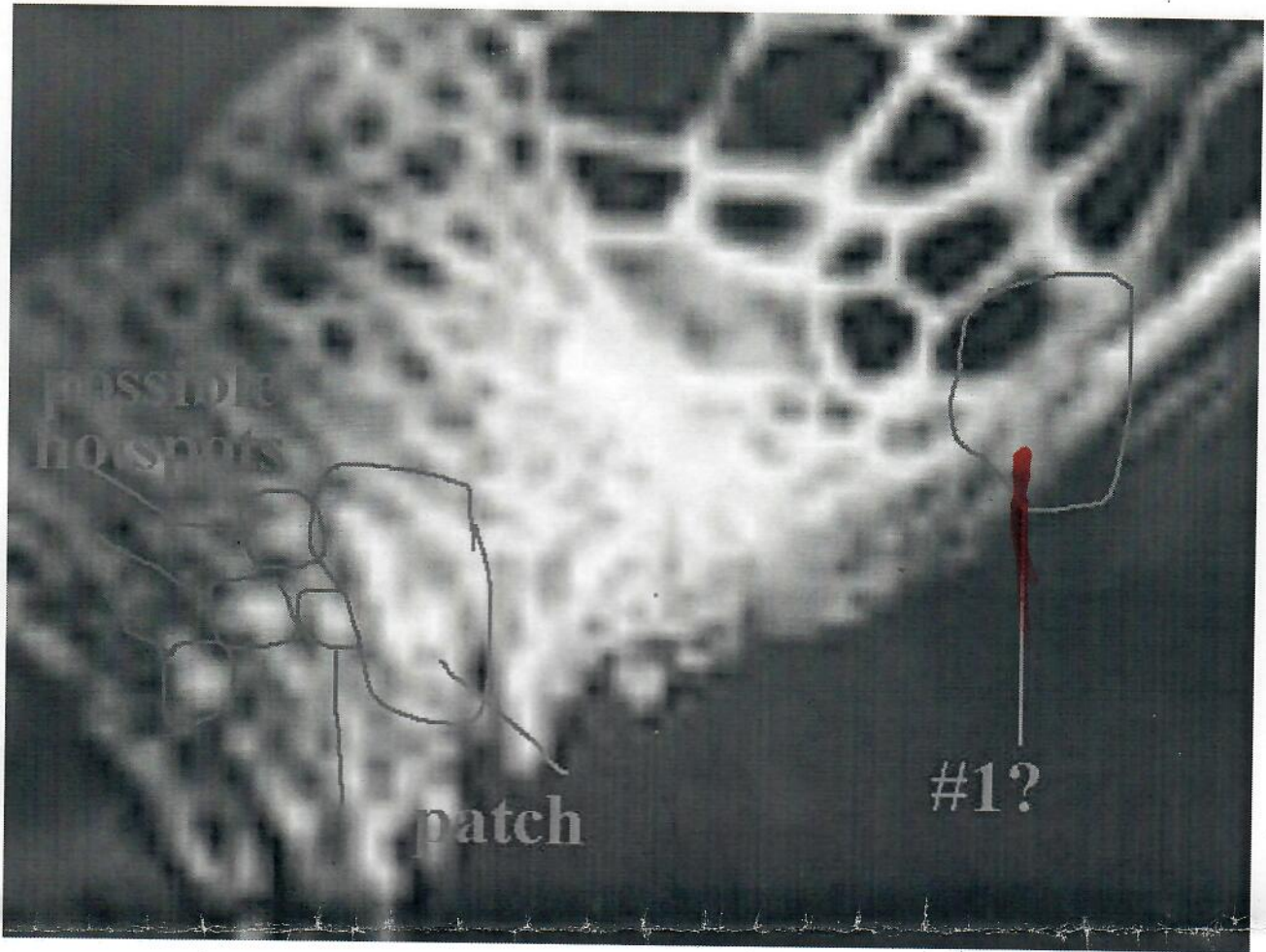
```

>On Thu, 15 Feb 2001, Ursula Keuper-Bennett wrote:

>> If you like I can separate head from rest of 4800 so you can see the
>> abnormality on RJH. And can magnify the other parts for you if your

> > computer doesn't do that on its own.
> > -----
> > On Thu, 15 Feb 2001, George H. Balazs wrote:
> >
> > > Date: Thu, 15 Feb 2001 08:15:18 -1000 (HST)
> > > From: George H. Balazs <gbalazs@honlab.nmfs.hawaii.edu>
> > > To: Ursula Keuper-Bennett <howzit@turtles.org>
> > > Cc: Peter Bennett <honu@turtles.org>
> > > Subject: Re: Good news / Bad News (fwd)
> > >
> > > please resend.
> > >
> > >







Handwritten notes:
 1st
 18.9
 2/15/01

MULTIPLICATION TABLE

1	2	3	4	5	6	7	8	9	10	11	12
2	4	6	8	10	12	14	16	18	20	22	24
3	6	9	12	15	18	21	24	27	30	33	36
4	8	12	16	20	24	28	32	36	40	44	48
5	10	15	20	25	30	35	40	45	50	55	60
6	12	18	24	30	36	42	48	54	60	66	72
7	14	21	28	35	42	49	56	63	70	77	84
8	16	24	32	40	48	56	64	72	80	88	96
9	18	27	36	45	54	63	72	81	90	99	108
10	20	30	40	50	60	70	80	90	100	110	120
11	22	33	44	55	66	77	88	99	110	121	132
12	24	36	48	60	72	84	96	108	120	132	144

Every seat is a front row seat!



CONVERSION TABLE

LENGTH

1 meter (m)	=	100 cm = 1,000 mm
1 millimeter (mm)	=	.001 m
1 centimeter (cm)	=	.01 m
1 decimeter (dm)	=	.1 m
1 decameter (dkm)	=	10 m
1 hectometer (hm)	=	100 m
1 kilometer (km)	=	1,000 m

CAPACITY

1 liter (l)	=	100 cl = 1,000 ml
1 milliliter (ml)	=	.001 l
1 centiliter (cl)	=	.01 l
1 deciliter (dl)	=	.1 l
1 decaliter (dkl)	=	10 l
1 hectoliter (hl)	=	100 l
1 kiloliter (kl)	=	1,000 l

WEIGHT

1 gram (g)	=	100 cg = 1,000 mg
1 milligram (mg)	=	.001 g
1 centigram (cg)	=	.01 g
1 decigram (dg)	=	.1 g
1 decagram (dkg)	=	10 g
1 hectogram (hg)	=	100 g
1 kilogram (kg)	=	1,000 g

GRAMMAR RULES

- There are eight parts of speech:

- NOUN**- the name of a person, place or thing
- VERB**- an action word
- ADJECTIVE**- describes a noun or pronoun
- ADVERB**- describes a verb, adjective or another adverb

- PRONOUN**- substitutes for a noun
- PREPOSITION**- connects a noun to another part of the sentence
- CONJUNCTION**- connects words or ideas
- INTERJECTION**- an exclamation

- Some verbs need helpers.

INCORRECT

I be / You be
I ain't / You ain't
I got to
I seen
I done

CORRECT

I am / You are
I am not / You are not
I have to
I have seen / I saw
I have done / I did

- Its is possessive. It's means "it is" or "it has".
Your is possessive. You're means "you are".

- Which word do I use?

Lay or Lie?

To "lay" is to place an object. To "lie" is to recline.

Affect or Effect?

To "affect" is to influence. To "effect" is to cause.

- Punctuation

A **comma** is used to indicate a pause within a sentence.

A **colon** is used prior to a list or long quotation.

A **semicolon** indicates a greater pause than that which is used between groups of words separated by commas.

An **apostrophe** is used to indicate the possessive as in *I've* or *they've*; and to form the plural of a letter.

An **hyphen** divides words in syllables such as *com-puter*.

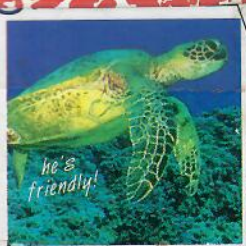
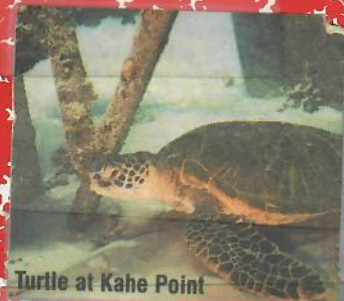
A **quotation mark** indicates the exact words someone has said. It is used in titles, short plays, television programs, magazine articles, and book titles.

Underlining is used with the titles of books, movies, and television programs.

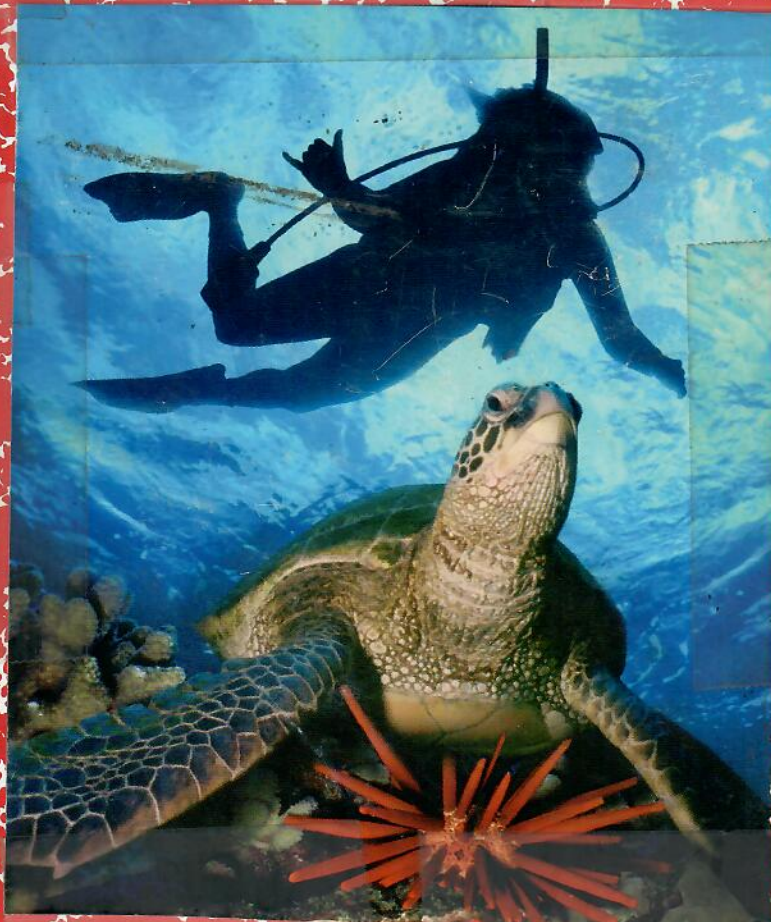




TURTLE TOWN



I took this cool photo at Turtle Town.



MAD 1 Book

Marine Turtle Research
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