



International Zoo Veterinary Group

Keighley Business Centre

South Street, Keighley

West Yorkshire

BD21 1AG, U.K.

Office Phone: +44 (0)1535 692000

E-mail: S.Thornton@izvg.co.uk

Fax: +44 (0)1535 690499

Mobile +44(0)7769 906609

www.izvg.co.uk

VETERINARY VISIT REPORT

Aquarium: Hastings Blue Reef

Visit date: 29th July 2011

Vet: [REDACTED]

Staff on visit: [REDACTED]

- 1) Entrance tank – there was a smell of mould as I entered the area. This is not a good first impression for visitors.
- 2) Native system – at the moment is at 21°C. This is far too high for many of the species held. In particular we have had major health issues in other aquariums with lesser spotted dogfish kept at this temperature.
- 3) Native system – currently goitre is being controlled by the addition of potassium iodide to the water. This method carries risks as changes in pH can lead to a sudden release of iodine. It is much safer to give oral doses of iodine via the elasmobranch vits which can be broken up to provide dosing for smaller fish.
- 4) Tank 2 – a small eyed ray was emaciated. Staff have tried increasing food but still only being fed 3 times a week. Juvenile rays need feeding 2-3 times a day. Once weight has been gained, it may be able to be fed just once a day but it is unlikely to cope with a feed frequency of less than this.
- 5) Tank 3 – sand smelt good.
- 6) Tank 5 – *Hippocampus hippocampus* – the individuals need to be id'd with numbered necklaces. Otherwise when [REDACTED] leaves, the identity of the breeding adult will be lost. The lack of temperature control on this tank is a risk to the seahorses.
- 7) Tank 6 – this tank is on a chiller and is kept at about 12°C. More visual barriers in this tank would help reduce aggression between wrasse.
- 8) Tank 7 – this tank needs more cleaning. Would look better if cleaning was done at least weekly. The build up of organics in these tanks provide a food source for parasites such as *Uronema*.
- 9) Tank 8 – Looks very good. Attractive and clean. Water changes are done more frequently on this tank so the water clarity is better.
- 10) Tank 9 – mullet – these will outgrow the tank but should be ok for the rest of this season.
- 11) Tank 10 – The peristaltic pump broke on the tank feeder so the tank has been switched back to 2-3 times a day feeds. This has resulted in the loss of many of the filter feeders.
- 12) Tank 11 – Snakelock anemones – very attractive.

- 13) Nursery – Aiptasia control better. Two of the tanks were clear of anemones, two had some.
Supersaturation has been a problem on this system but this has been made less likely by changes to the filtration with an additional biotower to help with degassing.
- 14) Discussed seahorse licences. Advised that the licence from Natural England needs to be found and must be available for the Zoo licence inspection.
- 15) Moon jellyfish – magnificent. These have not been on a chiller since December but summer temperatures are getting high. The chiller does not have a thermostat so the temperature can only be brought down very fast. Discussed various ways to reduce the temperature gradually over 2 weeks.
- 16) Cassiopeia – massive numbers through production. Advised advertise surplus on the NAW list serve.
- 17) Ray tank – a plaice had a tail base wound. Advised treat with Baytril by injection @ 0.075ml of 2.5% every other day for 5 doses.
- 18) Ray tank – electric ray had a healing lesion on the tail. Advised no treatment needed at the moment. There has been no further progress made on the obsolete chiller on this system. Temperatures have been reduced by taking one pump off line but it is already hot and will get hotter.
- 19) The site has only one working air blower at the moment. This means that if this one fails, there will be a crisis situation. A contingency plan is needed so there is no panic should this blower fail. There must be enough spare air stones and pumps available.
- 20) Ocean tank – looks good. Fish health good. The treatment given to the whole tank appears to have stopped the mortalities but the addition of the immune stimulants and vitamins undoubtedly has also helped.
- 21) Tank 14 – needs a gravel siphon and a strip down but fish look good.
- 22) Tank 15 – archer fish look very good.
- 23) Frogs – still a very poor display due to the condensation. The *Dendrobates azureus* died despite treatment.
- 24) Fire bellied toads – the crickets for these toads should be gut loaded with Calcipaste for 24hrs prior to being fed. At the moment the calcipaste is wasted because it is fed to all the crickets regardless of whether they are fed to the animals. Advised on separating the group to be fed and then just gut loading these. This should be done at every feed.
- 25) Pup fish tank – these all died. Staff are thinking about replacing with some Malawi cichlids. Advised that there are some Malawi's sitting in quarantine at London aquarium in need of a home and as these have also come from a Mycobacterium positive tank, there is no ethical problem putting them in the pupfish tank after a general cleanse.
- 26) Axolotls – this tank needed a thorough clean. The heater was unattractive and needed covering.
- 27) Tank 20 – skin lesions on some. Advised run tank at 3ppt salinity to help reduce lesions.
- 28) Lionfish – magnificent display.

- 29) GPO tank – the octopus died and has been replaced with wolfish. This could do with more fish. There may be surplus in the country so it would be worth advertising on the NAW list serve that some are wanted.
- 30) Coral tank – looks good.
- 31) Food prep – the use of multiplug adapters is generally not considered acceptable but as a temporary fix they should at least be attached up on the wall to prevent water running down lines to the sockets.
- 32) Drug discharge – currently there is no licence to discharge drugs. At the moment small quantities are poured onto cockle shell. This really needs to be sorted out.
- 33) Records – mortalities – very few gill press and skin scrapes have been done. The aim should be to gill press and skin scrape all fish mortalities and post mortem and send for histology a reasonable number including when there have been multiple mortalities in one tank or system.
- 34) Drug records – these show that the poor staff levels have lead to problems with treatments. When just one person was looking after the whole site, several treatments were missed. It is very important that treatments are completed as advised to maximise the chance of success.
- 35) Animal Health Enquiry forms (AHEFs) – vet advice given over the phone needs to be added to the AHEF to complete the records and allow review.
- 36) Water test records – the computerised records need to be set up to flag automatically when the reading is outside the acceptable level. At the moment the highlighting is done manually so it has been missed. More comments are needed on the flagged problem results.
- 37) Water tests – a public aquarium should be using professional test kits. However, when staff are very pushed, it would seem sensible to use the API dip sticks and then use a photometer if any readings are above zero.
- 38) Water tests – the site has no DO meter as the current one is broken. This needs to be sent off for repair.
- 39) Water quality – generally the water quality appears good but there is a constant problem with high temperatures and salinities. This is likely to be picked up by the inspector at the zoo licence inspection which is due in December 2011. Preparations should be started for this. It is a great concern that there is no conservation or research occurring. This will cause problems for the inspection.

The lack of staff and apparent lack of funding for this aquarium has put it at great risk of losses should further equipment fail. The upcoming zoo licence inspection is likely to be difficult and will need some significant work to get the aquarium through the process.

Aspro UK
Company wide Zoological Ethical review meeting 2010
Blue Reef Aquarium Bristol

Notes [REDACTED]

- SUMMARY OF PREVIOUS MINUTES

Should bring together ethical review notes from all sites and summarise before meeting.

First meeting of its kind so didn't do this for this meeting – instead working off points from ethical review at Newquay

[REDACTED] and all present agreed that a full company ethical review should happen once a year ideally and additionally all the individual sites should have an ethical review once per year independently with minutes feeding back to larger meeting.

It was raised by [REDACTED] that the secretary of states standards of Modern zoo Practice March 2000 state that ideally the zoo or aquarium director should be involved in the ethical review process and that for a large aquarium (or arguably chain of aquariums) a senior representative of the PR department should be involved in the ethical review process. It was decided that for the next company wide ethical review we should invite [REDACTED] or [REDACTED] to take part as ethical decisions could potentially result in expensive changes in practice and those people need to be aware of reasoning behind such decisions. [REDACTED] would be best to represent the PR department.

- GIANT PACIFIC OCTOPUS

On the subject of GPO husbandry – a species that historically has raised ethical questions due to its intelligent and charismatic nature. [REDACTED] is working as chair of the cephalopod focus group of the aquatic taxon Working group. [REDACTED] has volunteered to carry out a survey of cephalopods in UK aquaria. [REDACTED] has many new people involved in the GPO husbandry manual. [REDACTED] at Hastings has had a Nuffield bursary student make a maze for their GPO which has been very successful. Regarding the overall recommendations that [REDACTED] will make in the husbandry manual [REDACTED] gave his opinion that ideally each aquarium displaying them will have, like Newquay a second behind the scenes octopus quarantine tank (with filtered chilled water and a good lid) which can be used to retire senescent octopuses so that the customers do not have to see a dying animal guarding its eggs or falling apart – this is a negative experience for visitors and for octopus alike.

[REDACTED] and [REDACTED] said that this would be very difficult to arrange at their sites [REDACTED] pointed out that research carried out in USA shows that GPOs can be kept in much smaller tanks than we are currently using, this prevents them jetting and causing injuries to themselves and they feel secure in small 'dens'. When on public display it is obviously important to give them plenty of space during the active part of their lives. When not on display and in their old age, whilst guarding the eggs in the case of females or when falling apart (in the case of males) they should be fine in a much smaller vat. 1 metre diameter approx.

[REDACTED] said that he felt the GPO tank at Hastings was not well designed for this species.

[REDACTED] asked to see pictures of the tank.

████ said that we could try using pelagic fish species to make the tanks more attractive and to provide enrichment – plus starfish and anemones make the octo tanks more interesting to customers.

It was then discussed that for some of the tanks currently being used we could look into displaying Mediterranean octopus (*Octopus vulgaris*) if a good supplier could be found this species could potentially provide a good alternative to GPOs. █████ said that he has a contact in an aquarium at Galithia who could supply (*Octopus vulgaris*). Shipping them here could be the most difficult part – he suggested we could speak to the companies running Vivier lorries to see if their tanks could be used to bring back specimens to UK. Would need to look into licences etc from CEFAS – this may potentially mean that we would no longer have to treat effluent water from the displays – we could keep multiple med octopuses in a large GPO display.

ACTION – █████ to speak to █████ of CEFAS about licence for octopus vulgaris etc.

████ to speak to Galithia aquarium about supply of octopus vulgaris

████ to send photos and plans of Hastings GPO display to █████

All Blue Reefs to look at installing octopus quarantine tank for retirement.

- CONGER EEL

Due to their once only breeding strategy this species presents difficulties at the end of its display life as they become massively swollen with eggs or sperm and eventually need euthanizing- █████ raised this as an issue of concern as dealing with this is upsetting for staff and potentially customers plus is practically difficult. █████ said that at DSW they have had euthanase a conger but that the team on that site felt that it was still worth while keeping this species anyway- █████ said that it is not cause to not keep them but that if a site doesn't want to it is OK not to have them in the collection. In the case of BRA Bristol the ocean tank is not ideal for conger eels as there could be a predation issue as the tank is very well stocked.

DECISION it is up to each curatorial team to decide whether or not to keep this species.

- SPECIES ACQUISITION

Problems with █████ discussed – All agreed that alternatives need to be investigated. █████ suggested we should build a relationship with a collecting company and do direct import- ideally this company would be █████ accredited and able to prove sustainable practice and tracability. Ideally we would be able to visit and check that they are operating sustainably – it may be better to choose an Australian or Hawaiian firm as in western countries their activities are likely to be far better controlled by CITIEs and local conservation laws than in poorer countries.

████ suggested we make a surplus stock sheet and wish list for each site once per month. █████ will speak to Computer Terrorism and arrange for █████ and █████ to be able to access █████ common docs so we can see everyone else's temperatures and stocks, weekly sheets etc.

- FLASH PHOTOGRAPHY

████ reported that since we banned flash photography at BRA Newquay we have had no complaints from customers and our sharks feed much better. Cephalopods and garden eels particularly benefit. There have been more complaints from customers who are annoyed by other customers ignoring the signs but when a staff member explains that the ban has reduced the flash problem significantly but that there is no

actual evidence that small amounts of flash cause problems to the species they are reassured. [redacted] and [redacted] staff were very interested in the BRA experiences of this so the evidence from across Blue Reef will be sent via email to [redacted] and [redacted].
ACTION [redacted] to put together a summary of benefits of flash photography ban to [redacted] and [redacted]

- TOUCH POOLS

Touch pool protocol has been put together for BRA's by [redacted] [redacted] and [redacted] only ASPRO aquariums in Europe that still allow touching of Rays and fish according to [redacted] [redacted] and [redacted] would like a copy of the protocol. [redacted] described the rockpool talks and roadshows given at BRA Newquay. [redacted] would like to see a video of a talk. Touching rays has been banned in all BRA's for 10 years and we have received no complaints from customers – animals are less stressed [redacted] said that there is less skin complaints in rays. [redacted] reported that it is difficult to prove a link between touching and ill health but that Sealife have banned touching 3 years ago and they are not getting complaints. [redacted] said that wading in touch pools is stressful to animals and having to chase them with a net stresses them before they get touched – all present agreed that this is not a good idea.

[redacted] reported that [redacted] from London Sealife has done a study on death rates in shore crabs in touch pools and has found that they need to rest for at least 3 days between spending a couple of hours in a touch pool. Any less rest reduces lifespan drastically.

ACTIONS; [redacted] to email copy of [redacted] research poster to all present MS to send all a copy of rock pool talk video

[redacted] touch pool protocols to be sent to [redacted] and [redacted]

- NATIVE TEMPERATURE CONTROL

This was an issue raised by [redacted] of Hastings who explained how difficult it is to control temps in a poorly insulated building painted black. [redacted] agreed that similar problems have been experienced at BRA Newquay. [redacted] lost a whole tank of shannies this summer – a species that is particularly tough usually [redacted] asked if any histology had been carried out as at BRA Newquay shannies are very heat tolerant and are kept over 20 degrees for the whole summer, and occasionally get up to 23 degrees. They breed and are healthy at this temp [redacted] reported no histology had been carried out.

[redacted] gets beer chillers second hand reconditioned from local brewery very inexpensively – which would help with smaller native tanks.

Jelly fish system needs chilling at Hastings – [redacted] has stopped using chiller for most of the Newquay Aurelia jelly tanks and finds that most of the time if the jellies are at warm temps from juveniles they can cope with warm temps as adults – you do definitely get longer out of jellies if the tank temp is low though. It depends on where the polyps are from as Aurelia are found in a wide range of different temperature conditions.

[redacted] reported that he is particularly concerned about the temps in his ray pool. [redacted] pointed out that this tank is filtered using pumps which add considerably to the temperature of the tank. UG filtration does not increase temp of water. [redacted] said that he has asked for a new chiller many times. MS pointed out that battling against high ambient temps using a power thirsty chiller is potentially a waste of time and enlarges our carbon foot print plus costs money -- instead like Newquay [redacted] could look at

going tropical – and in the meantime switching to species that are temperature tolerant like mackerel / bream / mullet etc. [redacted] pointed out they keep native rays in a very warm sand tank with no problems (19- 21 degrees all summer)

ACTION – [redacted] to look at altering stock list for ray tank at Hastings. Attempt to find cheaper supplier of second hand beer chillers. [redacted] to provide support with tackling this issue.

- QUARANTINE FACILITIES

It was raised by ST at Newquay's ethical review that the company is now large enough to warrant a biological services style central quarantine. All present agreed that Portsmouth BRA has the best facilities and space to act as qtime for temperate species and that although BRA Bristol has the most central location [redacted] is also quite central and has a large Tropical quarantine space available. [redacted] and [redacted] agreed it would be suitable but would need investment to get the systems working better BS agreed. [redacted] said that [redacted] had done a fantastic job of managing the quarantine of fish acquired for [redacted] Bristol at [redacted] last year. It was agreed that this in combination with more sustainable acquisition would be a more sensible way of bringing in specimens. [redacted] said that the project would have to be funded by all the sites allocating part of their zoological budget. (perhaps it would be better if we gave all animals a price and payed more than [redacted] for each animal but enough to fund the qtime)

ACTION [redacted] to put together a detailed business plan for centralised Tropical qtime at [redacted] and [redacted] to put together a detailed business plan for centralised temperate Qtime at Portsmouth.

- REVIEW OF TRANSPORT FACILITIES IN COMPANY

[redacted] said this point has been raised as [redacted] share one circular transport tank and there currently are not sufficient tanks at every site to cope with emergency needs for transport should a tank break etc. It was raised that we should find out who in our local areas could help in such a problem – [redacted] said that the fish merchant from Kingsbridge who has large vivier trucks could be such a person. Solway from Scotland are very expensive if you need to get them to come down south. [redacted] have 2 shark tanks at De Jong in Holland – need to get them back. [redacted] of Starfish based in Weymouth has been used in the past and is a good contact. It was discussed whether we need a DO probe at each site for transport and all agreed it is sensible as sharing this sort of equipment doesn't work out. [redacted] said that Burmac Environmental does a DO, pH Temp and salinity set of 3 probes for £1500. [redacted] said that [redacted] do a YSI pH probe for £75 that is good quality and its only £25 per probe.

ACTIONS;- It is recommended that each site finds out who in locality could help in movement of fish in emergency.

- [redacted] to find out if we can buy some of NMA's transport vats they used on aeroplane.
- All sites to have DO meter and pH meter if they don't already have one.

- BIAZA MEMBERSHIP

Cost depends on visitor numbers – benefits are improved access to stock lists and many BIAZA members are not allowed to swap with non members. [redacted] Research forum looks useful. [redacted] says that the benefits may be better shared if not all members

of the group join but info is shared. [REDACTED] is pleased with membership – currently both [REDACTED] and [REDACTED] are members of BIAZA but no blue reefs are members.

All biaza members will have to join ZIMs (zoological information management system) this will cost £6000 per site for software – but will be a very good system. It will be available to non BIAZA members, and this may also stop aquariums joining as this cost in combination with BIAZA fees makes it expensive.

DECISION - keep this on hold for time being.

- OPPORTUNITIES FOR INCREASED CO-OPERATION BETWEEN
AQUARIUMS IN GROUP

As time was running out this was not discussed in detail but all were in agreement that this weekend had been a great opportunity to meet each other for the first time in some cases and to exchange ideas and improve future co-operation.

- ANY OTHER BUSINESS - none

