Report On The Death Of Gilbert's Potoroo
Juvenile Female #29

by Jackie Courtenay

for the Gilbert's Potoroo Recovery Team

May 12, 1997

Attachments

Post mortem report from Kevin Hilard

Costings on video equipment from Healesville

Background

On Saturday 26th April 1997, Female #29 was found dead on the floor of the cage after entering the cage to investigate an unpleasant smell. The animal had been dead for at least a couple of days as she was quite decomposed. Female #29 was the young of Female #17 who died on March 19th.

Since the animal was so decomposed, there was no necessity to conduct a post mortem examination immediately as no histology samples could be obtained. The animal was therefore placed in the freezer for the remainder of the weekend and taken to the District Vet. (Kevin Ellard) at Agriculture WA for post mortem on Monday morning.

Circumstances of the Death

The report on the death of Female #17 noted that both the young Female #29 and the old female with whom she was housed (#4) were being checked nightly to ensure they were moving around. During the week of April 22nd work was being conducted on finishing the prep. room area (for example sealing the floors in the prep. room and corridor, installing storage cupboards and drawers, fixing latches and doors to ensure that they were not sticking etc) and it was felt that with all the noise and activity occurring in the pen area it was better not to further stress the animals by entering the cage to flush them. This decision, combined with the strong smell of paint from the floor sealing, meant that the animal's death was not immediately noticed.

At last capture (April 19th) the young female appeared to be starting to pick up, had gained some weight (as had the old female she was housed with) and opportunistic observations of the two animals suggested that they were housed compatibly and were comfortable feeding near each other etc. There was no evidence of aggression (for example bites) on either animal at last capture.

Post Mortem Results

A post mortem report from Kevin Ellard is attached. As noted in the report, the body of the animal was heavily infested with maggots and in a state of advanced autolysis. This prevents any histological work being undertaken and also means that a conclusive cause of death cannot be established. In a

telephone conversation with Kevin Ellard he stated that he did not believe the animal had actually starved to death although it was difficult to be certain given the degree of decomposition. He also noted that the darkened tissue in the thorax appeared similar to bruising and it was therefore possible that the animal had died from an injury perhaps sustained by jumping onto a sharp stick, although it was again impossible to draw any firm conclusions. The unavoidable delay in finding the body of this animal means that we will never know the cause of death for certain.

Problems of monitoring multiply housed animals

This death highlights quite clearly the inadequacy of food intake records as a means of monitoring the health of multiply housed animals. Food intake is quite variable at the best of times, and is particularly prone to disturbance following handling or noise and activity in the pens. In addition, when animals are multiply housed, one animal failing to eat may be masked by the other cage mates increasing their consumption (especially of preferred foods) so that there is not a dramatic increase in the amount of food left uneaten. Since many of the other animals were not eating all that well during this period either, the reduction in food intake in Cage 1 did not seem exceptional, and was in any case within the normal range of food intake for the animals in that cage (ie Female #4 had apparently started eating more over this period). The food monitoring alone was not enough to alert staff to the fact that one animal was not eating at all. Even observing the animal moving around on a daily basis would probably not have revealed any health problems (unless she was obviously moribund or injured in some way) and would only have meant that the body was found sooner.

Improved monitoring of "at risk" animals could be achieved in several ways.

(a) Construction of an Isolation cage

The possibility of building an isolation cage into the corner of the prep. room has been suggested. Such a cage would enable an animal to be monitored carefully with food intake being more easily assessed and the animal handled and weighed with less disturbance than when they are housed in the full sized cage. The isolation cage would not be a quarantine cage in the sense of requiring full biosecurity measures, but would enable better monitoring of an

at risk animal over the short term. A preliminary idea would be for the cage to be about 2.5m x 1m x 1m with a dividing door that could be closed to enable easier catching and/or divide the cage in two in the event that two animals were requiring closer monitoring. The cage bottom could consist of a slide out sand tray which would be changed regularly for hygiene purposes. Costings on such a design are being sought.

(b) Video camera set up similar to that at Healesville Sanctuary
The presence of a permanent video camera set up would enable the daily monitoring of at risk animals without requiring them to be isolated either from other animals or from their "home cage". In the case of the recent death, a video camera recording activity in the cage each night would have revealed that the young female was not eating well and/or was being chased away from food by the older female, and her non-appearance at all in a night would have enabled either veterinary care if she was alive, or for her body to be found much more quickly if she had died. Visual monitoring by staff is not practical on a nightly basis and in any case the presence of an observer is likely to disturb the animals so that they do not feed properly. Such detailed monitoring need only be carried out over the period that an animal is perceived to be at risk, or in the course of conducting a specific behavioural study. It would also be useful in the case of new pairings to ensure that no aggression is occurring. Detailed costings on the Healesville system have been received and are being investigated by Dr. Alan Needham (Edith Cowan University) for use in a proposed Honours study. It would be desirable, however, to consider acquiring the equipment on a permanent basis. Details of equipment and costings as provided by Healesville are attached.

Recommendations

•Seek sponsorship or funding to purchase a video camera set up with at least two cameras to have as a permanent fixture in the potoroo pens. Investigations are under way to obtain such equipment for the duration of an Honours project but they are really required on an ongoing basis.
•Investigate the cost and practicality of constructing an isolation pen (not a quarantine pen) to enable closer monitoring of at risk animals when necessary.

Kevin Ellard
Wildlife Veterinary Services
649 Lower King Road
Albany WA 6330

Dr Jackie Courtney
CALM
120 Albany Highway
Albany WA 6330

Dear Jackie

RE: Post-mortem Report on Potoroo, Juvenile Female.

Examination of the potoroo carcase on Monday April 28, revealed that it was in an advanced state of autolysis and heavily infested with fly maggots. Because of the condition of the carcase post-mortem examination was limited to gross examination. The tissues were unsuitable for further laboratory testing.

Externally there were no visible signs of abnormalities, internally the abdomen also showed normal gross anatomy. It was noted that this animal appeared to have limited fat reserves which would be consistent with an animal dying of nutritional stress.

Within the thorax there was an area of darkened tissue in the left anterior aspect, however the thorax was heavily infested with maggots particularly in this region. It is impossible to determine whether this lesion was present prior to death but it is highly likely that it was caused by parasite damage after death.

It is not possible to determine the cause of death accurately in this animal. Considering the animal's history and the limited fat reserves, nutritional stress must be considered as possibility. The carcase has been stored in formalin and is held at the Albany Regional Animal Health Laboratories for future reference.

Kevin Ellard
Veterinary Surgeon

May 12, 1997.

HEALESVILLE
SANCTUARY

25 March, 1997

Jackie Courtney
CALM
Two Peoples Bay Nature Reserve
Albany 6330 WA

Dear Jackie,

The details on the camera equipment are :

- Mini camera black & white $253
- Quad splitter Black & White $877
- Monitor " " $700
- 12v transformer $ 89
- 100 metres camera cable $ 69

purchased from Javelin PO Box 373 Mount Waverley, Vic. 3149 Ph 9558 8222 Fax 9558 8188.

Our time lapse video was purchased from GEC, quote included. This equipment allows you to run 4 cameras of the same unit over 170 hour period. We use super VHS tapes as the quality is superior to normal VHS tapes. We made our own light boxes with a black perspex that blocks out all light except that at 800 nanometre. This was purchased from Plastics for Industry (we think) Ph 9769 1257.

As I explained we did borrow equipment from Sony also. The contact name for you in WA is Warwick Lang, Regional Manager, Broadcast & Professional Division WA, Sony Australia, mobile Ph 018 020307. Mention Martin Richmonds name and his association with lending equipment to Healesville Sanctuary for the Mountain Pygmy Possum project, this may help.

Kind regards,

Merril Halley
Keeper-In-Charge

mh:mh:jackie
25.3.97

PO Box 248 Healesville
Victoria 3777 Australia
Telephone 059 62 1022
Facsimile 059 62 2153

GEC VIDEO SYSTEMS DIVISION **Panasonic**

Closed Circuit Video Systems

28 February 1997 V970228.1

Healesville Sanctuary
Badger Creek Road
HEALESVILLE VIC 3777
Attn: Fisk
Tel: 03 5962 4022
Fax: 03 5962 2139

Dear Fisk,

We have pleasure in setting out below our quotation for Panasonic video equipment as requested.

Installations of similar Panasonic video equipment can be found throughout Australia in Government Departments, Schools, Universities and General Industry.

The Panasonic video equipment specified in the quotation below is noted throughout the industry for its high performance and extreme reliability.

QUOTATION

Item No.	Model/Description	Qty	Total Amount (Ex Tax)
1.	AGTL700 Panasonic 170 Hour SVHS Time Lapse VCR	1	$1,880
2.	WVCP410 Panasonic 480 Line Colour Camera, 0.9 Lux	1	$794
3.	WVCP220 Panasonic 330 Line Colour Camera, 0.4 Lux	1	$664