# File name: BMmembercast Moth Man\_mixdown.mp3

**Moderator questions in Bold,** Respondents in Regular text.

KEY: **Unable to decipher** = (inaudible + timecode), **Phonetic spelling** (ph) + timecode), **Missed word** = (mw + timecode), **Talking over each other** = (talking over each other + timecode).

**(TC: 00:00:01)**

**Moderator: Welcome to The British Museum Membercast. Hello and welcome to The British Museum Membercast, I'm Iszi Lawrence and alas the museum is still in lockdown due to the COVID-19 crisis, I'm currently speaking in June 2020 but fear not you can always go online to the website, you can look at the collection online there, it's all been digitised, it's absolutely beautiful. You can really take a good look at some of the objects and learn about them from home. If you are also a member of the The British Museum and I do hope you are, you can actually go to The British Museum website and take a look at future digital membership events. We've been doing everything from quizzes to webinars, one person who did a webinar is my interviewee this week, I'm going to speak to Adie Doyle. He goes by the name of Moth Man which I'll let him explain but his work in the museum is vital and it carries on despite the lockdown, so he's the perfect man I thought to speak to today. When we were setting this meeting up I heard that Moth Man was the thing that you went by, the moniker of choice but your real name's Adrian isn't it, Adrian Doyle?**

(TC: 00:01:10)

Adie Doyle: Yes, Adie Doyle. I'm the Moth Man or the bug man or the rat man or the mouse man depending on which hat I'm wearing at the time.

**(TC: 00:01:17)**

**Moderator: Those are amazing hats though. So, what's your real job title then?**

(TC: 00:01:21)

Adie Doyle: I'm called the integrated pest management manager.

**(TC: 00:01:24)**

**Moderator: That sounds a lot posher than janitor, when you say pest management I'm imagining a rat catcher with a net. Do you have a rat catching net, I think that's the first question?**

(TC: 00:01:32)

Adie Doyle: I personally don't have, to put it into context we have a subcontractor who actually does building pest management and they're the people who chase after the mice and the rats and the foxes and the birds.

**(TC: 00:01:44)**

**Moderator: I think what I'm trying to, sort of, get you to underline here is that this is an actual proper scientific part of the museum, it's not putting a few moth balls in cupboards.**

(TC: 00:01:55)

Adie Doyle: I understand what you're saying. No, this is a scientific approach to protecting museum collection from damage, to give you an example at home for example you might have webbing clothes moths which you would get in your wardrobe and you might get in the carpet and you can deal with them at home quite easily. You can imagine an organisation like The British Museum which is made up of umpteen different types of building, different collections all over the place, we have to do this strategically, we have to identify what the insects are and also the risk to the collections. We do that by literally looking at them under a microscope and working out what they are and what are they going to attack.

**(TC: 00:02:32)**

**Moderator: So, what's your background then, are you like a zoologist, how did you get into this job?**

(TC: 00:02:37)

Adie Doyle: Actually I'm a conservator, years and years ago I worked at the Natural History Museum and over time I developed an interest in what's called preventive conservation which is a generic term from preventing damage if you like and I was involved in some research when I worked at the NHM on heat treatments to kill insects. On the strength of that the Natural History Museum invited me to take over and manage a new project which was the integrated pest management strategy and it, sort of, took off from there. So, although my background actually is in palaeontology, I've done excavations on dinosaurs and all that sort of thing. I've developed into a research field and from that it becomes analytical. So, it wasn't a path I chose, it just, sort of, went that way.

**(TC: 00:03:23)**

**Moderator: It just happened because I'm just thinking for your, you know, palaeontology background there can't be many bugs that eat dinosaur fossils.**

(TC: 00:03:31)

Adie Doyle: Well, it depends on whether you believe in the films like Jurassic Park on not but, I mean, insects still play a part in palaeontology. I mean, fundamentally I'm a preventative conservator or collections risk conservator and part of that involves looking at the environment, things like temperature, light, humidity, cleaning standards, all of these are levels of protecting the collection.

**(TC: 00:03:54)**

**Moderator: Okay. So, before the insects set in you're making sure that the environment is inhabitable for them?**

(TC: 00:03:59)

Adie Doyle: Absolutely. If we split the museum into two areas what you might call front of house and back of house, front of house being the gallery areas or the grounds or the cafeterias and all that sort of thing. We are concerned with objects that are fundamentally on open to display and obviously where there is food or there is a lot of human activity, people shed skin on their clothing and they shed hair, all sorts of things like that. That can deposit itself on a museum object or it can go on the floor or it can go on a plinth or a surface or whatever. A conservator is responsible for making sure that the objects are not being damaged by those things. From my point of view skin flakes and hair flakes and things like that are actually a food for insects.

**(TC: 00:04:46)**

**Moderator: Tasty.**

(TC: 00:04:47)

Adie Doyle: Very tasty and different insects eat different things. So, for example I'm thinking in the Africa collection downstairs we have some objects on open display which are very vulnerable to moths. So, on the one hand we don't actually have any moths in that gallery, nevertheless the collections themselves are very vulnerable and a phrase I use which people seem to like is munchability, how munchable is the collection.

**(TC: 00:05:13)**

**Moderator: I suppose, you know, if you go into the Egyptian collection where you have these big stone statues are they pretty safe compared to the fabrics and the woods and everything else?**

(TC: 00:05:23)

Adie Doyle: Definitely but, I mean, sometimes these sculptures if you like which are made of stone also have wood in them, supporting posts or bits in them or whatever, so they can be vulnerable to wood insect damage but the other thing to bear in mind is the museum is and like a lot of organisations they're all open spaces. We are aware that all collections can be eaten if you like or attacked from any part of the building. So, even though the sculpture collection, gallery four and gallery six are themselves not vulnerable to insect damage, insects like webbing clothes moths can live, can breed there, they will sniff out collections in another part of the museum where they want to eat. The rule of thumb is it's terrifying in a way is it's the male moths that are flying around looking for the females, a male moth can sniff out a female pheromone one kilometre away in a straight line.

**(TC: 00:06:19)**

**Moderator: What, a kilometre?**

(TC: 00:06:21)

Adie Doyle: One kilometre.

**(TC: 00:06:22)**

**Moderator: They've got tiny noses, how is that even possible.**

(TC: 00:06:25)

Adie Doyle: They've got very sensitive noses.

**(TC: 00:06:28)**

**Moderator: So, are they the main, you know, animal the causes you problems are moths?**

(TC: 00:06:33)

Adie Doyle: These days, I mean, I'm on the UK pest committee called Pest Odyssey and we share data with all sorts of other museums and heritage organisations and we're all saying moths are the problem now, webbing clothes moths. Funnily enough, I was reading a journal only this morning, nobody really knows why moths are a problem now. It could be something to do with life cycle changes. Certainly, in the late 1970s, there were some really good chemicals that we used to be able to put out that would give off a vapour that kills moths and we're not allowed to use those anymore. So, twenty years ago we didn't have a moth problem, we had a cigarette beetle or carpet beetle problem, again nobody really knows, it also could be climate change. One of the things I've always considered is when I was a kid and used to come to London, I remember even the BM being very cold, you always used to have to wear a coat, whereas today the climate is there for the people as well as for the objects. So, they're warm and they're climate-controlled and this means that insects that would normally die when it's cold are still breeding. So, it's webbing clothes moths and that's what you will find at home in your wardrobes or in your carpets or just flying around.

**(TC: 00:07:46)**

**Moderator: What do you do about webbing clothes moths, I mean, is there anything you can do?**

(TC: 00:07:49)

Adie Doyle: Well, it's twofold, first of all you have to find out what the problem is and where it is and the best way of doing this is to put out moth pheromone pads, you can buy them from all sorts of places online or in shops. The pad has a pheromone on it which is the equivalent of 1,000 female moths, it looks like a piece of sticky cardboard. The male moths are attracted to it and get stuck on it and that gives you an idea of where the moths are. So, if you, say, had a problem in a bedroom I would put one in each corner of the bedroom and one in a wardrobe and see where the moths are. You need to, sort of, zone in on where the moths are, they could be in the carpet, they could be in the wardrobe. Then you need to clear out the room, certainly vacuum the carpet, empty the wardrobe. You can spray clothes but the best way of dealing with things is to wash everything in the highest temperature you could possibly wash clothes with. If you can't do that then in an organisation like the museum the preferred choice is freezing. So, we have a huge walk-in freezer which is computer-controlled, for example, which goes down to minus 35, that will kill moths.

**(TC: 00:08:57)**

**Moderator: Is that there just for the pest control or does it have other purposes, so are you, sort of, hijacking some bit of technology or was this bought for the museum for this purpose?**

(TC: 00:09:07)

Adie Doyle: No, it was bought for the museum, I mean, we had a company that made it for us to our specifications with computer programmes in it and it's a large walk in freezer. We have to wrap objects before they go in the freezer, put them in, stack them so that they're not too close to each other because you need the air to circulate and programme the computer to run for a whole week. By which time it'll bring the temperature down to minus 35 over about 80 hours, it will then hold it for 72 hours at minus 35 and then it will gradually bring the temperature up to room temperature. At the end of that cycle, assuming the cycle works correctly we will have killed all of the insects, whether they're carpet beetles or they're more moths and whether they're larvae. The point being that it's a safe process to treat the objects but if we then put the objects back into a room where there are moths then the moths will find them again. So, as part of the process (TC 00:10:00) we actually go and clean the space where they were.

**(TC: 00:10:03)**

**Moderator: How do you recognise moth damage from a different sort of insect damage or just a weather damage or a chemical damage?**

(TC: 00:10:09)

Adie Doyle: Certainly on fabric, so for instance like silk and wool you actually see, it's a bit difficult to describe, it looks like it's chewed. If a seam goes on a textile, so for example I'm wearing a jumper at the moment, if the seam goes you'll see it will go along an edge. If a join goes on a piece of leather on something like that it will tend to be where a structure is weakened because of stitching or whatever. When it comes to moth damage you tend to find it's, sort of, picked at, that's the best way of describing it, it's not linear.

**(TC: 00:10:43)**

**Moderator: It's, sort of, crumbly isn't it.**

(TC: 00:10:45)

Adie Doyle: Yes. Also, it'll be in an odd place, so you might open a drawer and find a scarf and you think there's a hole in the scarf, it won't be very big but it's not consistent with a seam or a join where the stitching has probably failed. That's the best way to describe it.

**(TC: 00:11:00)**

**Moderator: Ideally you were saying this, you know, you don't want to see the damage on the objects you want to catch them before they make the damage.**

(TC: 00:11:07)

Adie Doyle: Absolutely and, I mean, that fundamentally is my role. So, I coordinate a huge piece of work where in other departments are responsible for putting out moth monitor, which I referred to earlier, they're the ones with the pheromones but also little sticky traps that go on the floor that basically look like a pyramid of cardboard and they have an adhesive on it. There's nothing fancy about it, it's just an adhesive. We put them around galleries and stores and they're all hidden in the galleries so you won't find them and every three months they are checked. We have a huge database which the data is entered into, we then analyse the data to see whether or not this is what we would normally expect and to be honest you would always expect any organisation and the home to have a certain amount of moths and a certain amount of carpet beetles. It's where it's changed, it's got a lot for some reason and it's invariably caused by some activity that's changed. Then we go in and then have a quick look at the collections to make sure the collections aren't damaged but also as I say if necessary we can send in the team to do a deep clean. If necessary perhaps as a precaution any objects in that store which are vulnerable we might put through the freezer just to make absolutely sure.

**(TC: 00:12:19)**

**Moderator: I'm imagine you see that you've got on your, like, office computer this big, sort of, database and charts showing all the rise and falls and all the different types of species of bugs, is it that organised? I really want you to be super nerdy, that's what I really want.**

(TC: 00:12:34)

Adie Doyle: Well, it depends on what you mean by a nerd. Yes, I have a huge spreadsheet, I think it's 1,700 monitors we have across all three museum sites and then every quarter I'm using a process called conditional formatting, if the number that's put in the database by myself or someone else exceeds a threshold it changes colour. So, for example in an area where we have textiles if somebody put anything more than three moths in, actually on the spreadsheet the cell would change red because that's something I need to be concerned about, if it went to five then the cell would change red and the number would go bold. So, that when you're quickly looking through a spreadsheet I can see where the highlights are, from that I can draw graphs and look at changes and things. The other thing to bear in mind is that things change even in a museum, collections are moved, we have to be careful we're not taking the problem with us. So, we're monitoring the location but also it has to be put into the context of the activity that's going on at the same time.

**(TC: 00:13:42)**

**Moderator: Right because in your webinar you talked extensively about looking at dust, I mean, how often do you check the dust and why do you check the dust?**

(TC: 00:13:52)

Adie Doyle: I have a good working relationship with our cleaning company and they very kindly collect dust for me that they sweep up from the floor, yes. You were talking earlier about nerdy things, so I have bags of dust which I look up under a microscope and it's twofold. First of all, I want to see what the dust is and I can inform the conservators and, in fact, our conservation department actually do dust analysis on museum objects, but what I'm looking for are things that give us an indication that there were insects there. So, it may be the insect bodies themselves, it may be the wings, it may be the body, it may be what we call frass which is insect poo, which looks like tiny little brown dots. It's not unpleasant, it looks like tiny little brown dots because the dust itself can be a food source for the insects. This isn't just dust on objects, this is dust on showcases, this is in the grilles in the air conditioning unit and all that sort of thing. If there are a lot of insects in there, then they must be breeding somewhere, and bearing in mind that air conditioning moves air around the museum, as I said earlier although we might find a lot of dust in the Egyptian sculpture gallery because it's very busy and a lot of people are there, that will be a food source for insects which will then go and attack another collection somewhere else, either on display or in a gallery or actually in a store because they will seek it out, they will find it.

**(TC: 00:15:20)**

**Moderator: So, what about not though because at the moment the museums obviously shut because of COVID-19, so presumably, I mean, it must be completely different, there's no dust. I mean, have the numbers of bugs gone up or down or what's happening?**

(TC: 00:15:33)

Adie Doyle: Well, as part of our normal processes we monitor the environment and as I said we track and monitor quarterly, so there were no problems before we locked down and that's my job to make sure that there are no problems. So, we had a form, a status, already aware, since the public aren't there the levels of dust have obviously decreased in the galleries. So, although our cleaning teams are still there working, I'm less concerned about that as a source of pest problem. With respect to the stores, we are at the point where now we need to go in and check the moth monitors and the floor monitors. The reason for that is first of all we do a quarterly anyway and secondly the moth monitors, the pheromone only lasts for three months anyway, so effectively it's not working anymore. Now, the way we manage and this is in common with all heritage organisations, we have risk managed collection based on its vulnerability to insects, it's what I call the munchability index. So, we already know where the munchable collections are, we already know where and in fact we didn't have any, if we had a problem. So, we already had a status check and colleagues of mine have been going in and targeting specific areas where we want to get more information. Obviously, they're following all the health and safety guidelines and social distancing and all that sort of thing and have been able to replace particularly moth monitors in certain collection areas where we were concerned about. The results have come back and shown that we don't have any moth problems at all, which is really encouraging.

So, it's question now of when lockdown is released that we will go into the museum in controlled stages and I would imagine in the fullness of time that every store will be checked and all of the moth monitors and the bug monitors, if you like, will be checked. If we find anything then we will deal with it but to be honest I'm not expecting to see any problems because there hasn't been any activity, although it's getting hotter at the moment the air conditioning has been on in some of our stores to protect the collections from splitting and cracking. So, I would be very surprised to find that we've had a problem during lockdown but also bearing in mind that we've got the freezer and we've got other approaches we should be able to deal with it fairly quickly if there was one.

**(TC: 00:18:03)**

**Moderator: What about others species, I mean, things like flies, would there be any standing water or anything like that that might cause an issue because don't get noticed and picked up on as regularly do they if there isn't, you know, people walking around all the time?**

(TC: 00:18:18)

Adie Doyle: Well, this is actually quite interesting because business services, front of house are my eyes and ears if you like for any problems in the galleries and they will send me an email or send an email to the service desk to say I think you better look at this, that and the other. What I have noticed and in common with other organisations in this country and colleagues of mine I'm speaking to in the States as well is we're finding some what are called drain flies or phorid flies or humpback flies depending on which side of the pond you live, they're normally associated with still water. Now, what tends to happen is when people are working drains are flushed and loos are flushed and water is run and all the rest of it, they tend to be flushed away. Now, as part of the lockdown process the museum has shut down water supplies, they will be safe if you like, they will be made safe for legionella for when we start again. What has shown up is we've found some drain flies may have been living in the U-bends of the tracks because the drains haven't been flushed and obviously they weren't particularly dry. So, that's where our contract teams have gone in and dealt with the problem, flushed again, if necessary we've put extra traps out and the situation has more or less gone. As I say I was talking to colleagues in the States as well and they have a similar problem, so there's been a slight shift in what we expect.

**(TC: 00:19:44)**

**Moderator: Are humpback are they an issue for the actual collection or are they just annoying to have?**

(TC: 00:19:49)

Adie Doyle: I'm not aware of them actually eating the collections, the problem with insects is when they die they become a food source for other insects.

**(TC: 00:19:56)**

**Moderator: Yes, that makes sense. What about bigger pests because, you know, (TC 00:20:00) we've stuck to, sort of, moths and flies and smaller creatures but, I mean, I know people are quite scared of them but do you get, like, rats and mice and things like that in the museum?**

(TC: 00:20:11)

Adie Doyle: In the grounds of the museum we get rats and mice and although it's the middle of the city all cities have rats and mice and those of you that know The British Museum it's surrounding be a lot of trees, there's grounds and all the rest of it. In the summer the rats and the mice don't come indoors they stay outside because it's warm. So, in many ways this lockdown has been at a very convenient time from that point of view. The other thing is that the building is sealed, the doors are closed, the windows are locked and all that sort of thing, so with a few exceptions where we've had some mice get in they have largely been left outside and that's the same with the pigeons as well. You can imagine on a standard day where the museum is very busy and there are a lot of people say maybe having some food in front of the museum where the courtyard is, pigeons are flying around and all the rest of it because they're waiting for somebody to drop something and all the rest of it. There's nobody there at the moment.

**(TC: 00:21:13)**

**Moderator: Some people feed them, they're naughty.**

(TC: 00:21:15)

Adie Doyle: Some people feed them, they're rats with wings as far as I'm concerned. There's nobody there so the pigeons have flown off and bothered someone else. So, in that respect again we see a shift in patterns. I think the other thing to bear in mind is that catering company are not operating at the moment obviously because the museum is closed, so there's no food sources around, all of the catering outlets have been cleared, all the warehouses and stores have been cleared out. So, there's no food for the mice and the rats to go to.

**(TC: 00:21:48)**

**Moderator: That's why I was worried you see because if there's no food for the rats and mice they might be more likely to go after the less edible, the things like leather and, you know, old books and things that otherwise they would've just walked past to get to a nice bit of cake, they might in for. That's what I was thinking, if I was a rat.**

(TC: 00:22:04)

Adie Doyle: Yes, that's a fair point and there was something in the newspaper the other day about New York being overrun with rats because of the lack of fast food at the moment and they're absolutely desperate to eat. The thing to bear in mind is that the collections are all sealed up in stores, they're what are called bristle strips or brush strips on all the doors, the doors are jammed, sealed, locked, they've all got alarms on them and all sorts of things like that. It is very rare for mice to actually get into a store, I'm really trying to think of any situation in the last two years when I've been doing this job and there hasn't been. So, yes there's an increased risk that they will go further to try and find a food source but having said that because there's no need for them to be there I think they won't be indoors because it's warm, it's in the winter where you have the rodent problems as a rule.

**(TC: 00:22:55)**

**Moderator: I also have a question, now this is the trouble you see, I was speaking to Irving Finkel and you can't believe anything he says when he's not talking about cuneiform but he told me that there were certain types of beetle that eat electronics, which to me is just baffling. Do you know anything about this, is this something you're concerned by?**

(TC: 00:23:14)

Adie Doyle: I've never heard that one.

**(TC: 00:23:17)**

**Moderator: Excellent. I knew he was winding me up.**

(TC: 00:23:21)

Adie Doyle: I mean, beetles, it depends on the electronics, this is quite interesting because in the old days, going back say 50 or 60 years in electronic equipment, so for example like a fan or something with a heating element you may have a fabric cloths which may have been made of asbestos or something like that. They wouldn't eat that, well they might eat it but electrical flex used to be coated with fabric, moths and insects could potentially eat the fabric on the flex on the electrical thing. They're not interested in non organic, they're after organic, they need some protein, they need something to eat and consume and make babies and then they fly off and make more babies. So, that's what they're trying to do.

**(TC: 00:24:08)**

**Moderator: It's such a shame that they're isn't, sort of, you know how in certain environments there could be a natural level that you could keep them at where they wouldn't damage the collection and you could just release big spiders to control them or have a ecosystem and it all be, you know, done that way.**

(TC: 00:24:23)

Adie Doyle: There are new processes coming out, there's some work I think going on at the Natural History Museum but you'd need to speak to them, where they're looking at the possibility of introducing what you might call micro flies and the micro flies actually live in the bodies of insects and eat them.

**(TC: 00:24:43)**

**Moderator: Wow, like those predatory wasps.**

(TC: 00:24:45)

Adie Doyle: That kind of principle, yes absolutely. Then of course what do you do with all the little flies afterwards, so I'm not doing that test.

**(TC: 00:24:52)**

**Moderator: It's lovely that it's so creative. I mean, what is the best part of your job do you think?**

(TC: 00:24:57)

Adie Doyle: I like crawling around on my hands and knees with a torch under showcases and all the rest of it. We usually do it when the public's not there because they give you funny looks, but that's really rewarding because you're actually snooping around, and bearing in mind some of the buildings in the museum are several hundred years old. You can imagine that there are all sorts of-, I love architectural and there are all sorts of architectural details you can that are hidden behind a panel that you wouldn't normally see. Actually getting to the root of the problem, actually snooping out with a torch and putting special monitors out and all the rest of it, finding the source of the problem and dealing with and then say in six months' time you can see that your moths have gone down say from twenty in a location to two and you can see that that's a success.

**(TC: 00:25:41)**

**Moderator: Is there any way anybody could find out anything more about this that you know online?**

(TC: 00:25:45)

Adie Doyle: We haven't actually on the BM on the website, but I'll tell you what is a very, very good resource it's a website called What's Eating Your Collections. It also has a very good list with colour photographs of insects that you can match up. So, if you find anything at home or wherever you are you can match it all up and it will actually tell you the name of the insect and what it eats and the problems it causes. There is lots of stuff out there, what you have to be careful of is false information. Don't rely on promotional information, go through a known organisation like English Heritage, the National Trust, What's Eating Your Collections. Organisations that have a reliable resource are always what you should do before you go mad and start buying sprays and traps and all the rest of it.

**(TC: 00:26:33)**

**Moderator: I'm going to put my cardigan in the freezer, that's what I'm going to do.**

(TC: 00:26:36)

Adie Doyle: Is it a home freezer?

**(TC: 00:26:38)**

**Moderator: Yes, it's probably not cold enough is it.**

(TC: 00:26:40)

Adie Doyle: No, let me guess, you'd need to put that in there for a month to actually get the temperature.

**(TC: 00:26:46)**

**Moderator: That's alright, I'm not one to make lots of, like, crumbles and stuff that need freezing, it's fine.**

(TC: 00:26:50)

Adie Doyle: Okay, yes. So, I mean, a domestic freezer is a month, minus 40 is 48 hours, a minus 30 is 72 hours. So, the point is depending on the temperature, you have to freeze it longer to make sure you kill the insects. The length of time they're in the freezer is crucial because otherwise, the insects go into what's called a torpor, they go into, sort of, a suspended animation if you like. So, it's not just the temperature it's the length of time at that temperature which is what effectively finishes them off.

**(TC: 00:27:18)**

**Moderator: It's amazing how evolution has made them that strong though, you know, I can barely stand in a cold bath for about two seconds, that'd be me dead. Anyway, so with the image of me shivering in the bath I think we can leave that interview there. However, I know a few of you would have been thinking, 'Hang on Iszi he said he was a palaeontologist don't you love dinosaurs?' I do love dinosaurs, I don't know if that's come out in this podcast before now but I'm a huge fan of dinosaurs, so while I had him I did have to ask him about his work at the Natural Museum. It is one of things that we do not lose, I've just started a podcast about dinosaurs, Terrible Lizards.**

(TC: 00:27:55)

Adie Doyle: I was on the team that dug up a new dinosaur called Baryonyx in 1983.

**(TC: 00:28:00)**

**Moderator: Boom, where were you?**

(TC: 00:28:02)

Adie Doyle: It was in a small village called Ockley which is near Dorking, what happened was somebody came, I can't it's such a long time ago, a member of the public came in with what looked like bits of a claw and said he got it from what was called Smoked Jack's Pit at the time. Brought it in and then a team of us went down and had a look and we found, it was a brick pit so there's machines scraping all the brick up, clay off and all the rest of it, we found bits of dinosaur all over the place but it was so awful, it was so stick and muddy we just put corrugated iron over it and left it for a couple of months. Then a whole team of us went back and basically dug up huge chucks of this mud and god knows what, brought it back to the conservation lab at the NHM and I was one of team of about ten. We worked on it for ten years, cleaning all the mud, chipping away all of the stuff and then we made a replica of it and put it on display. So, that's my old world that is, that was 83.

**(TC: 00:28:57)**

**Moderator: I mean, was that the first time it was found or did you describe it?**

(TC: 00:29:01)

Adie Doyle: Yes, it was a brand new species, it was called Baryonyx which is Greek for heavy claw and walkeri was named after the chap called William Walker who actually found it. I kept loads of the stuff, I've got newspaper cuttings.

**(TC: 00:29:15)**

**Moderator: It looks like a theropod and carnivorous, god it looks terrifying, it's huge.**

(TC: 00:29:20)

Adie Doyle: What was interesting about it was because the snout, I was walking on the mandible which is the, sort of, top bit of the snout if you like.

**(TC: 00:29:27)**

**Moderator: Yes and it's got this bulb.**

(TC: 00:29:28)

Adie Doyle: It had this, sort of, bulbous bit at the front and because we were chipping it out of the rock and we didn't really know what it looked like, obviously because, you know, you can't x-ray huge chunks of rock. We got some crocodile skulls over from the zoology department because it seemed to look like a crocodile skull. So, as we were chipping away the rock with pneumatic pens and rotary, sort of, dental tools we could make a guess as to where the bone was because it wasn't always very clear the difference between the bone and the rock. We got fed up with it in the end, we called it bloody onyx, after ten years (TC 00:30:00).

**(TC: 00:30:00)**

**Moderator: Is it with the Natural History Museum or where is it now, do you know?**

(TC: 00:30:03)

Adie Doyle: Yes, all the bones are at the NHM, there's a half panel replica on display in the dinosaur gallery.

**(TC: 00:30:10)**

**Moderator: The bulb thing on the nose do you what that was for?**

(TC: 00:30:12)

Adie Doyle: The theory which they had at the time which has since been supported was it was like a crocodile or it didn't chew, it went in and snapped at its prey. God, it's such a long time ago. What I do remember is in the gut, where the gut was we found some fish scales and they were sent for analysis, they were bunged under one of the electron microscopes. They were able to identify the fish as a certain type and because that's where the gut was, that meant that was the food it had in its stomach when it died. So, it tied in with the anatomy and the way it was, the way it looked and the way its skull was, that it was a fish eater, probably, well, certainly would've stuck its snout into the fish and into the river or whatever and snapped at them. I think it was the edge of a lagoon at that point, probably not a running river. Then it had a big spike, a big claw on the end, one big claw, probably hoicked fish out with the claw, a bit like a grizzly bear, that was the analogy at the time. They've since found more, they're part of a Spinosaurus, but there are some really cool animations on the internet now which they weren't available when I did that work, which actually gave you an idea about how the thing would've moved and everything. So, it's like everything else.

**(TC: 00:31:26)**

**Moderator: From the look of it it's huge, it's nearly three metres long nearly.**

(TC: 00:31:28)

Adie Doyle: It was. It was very long and very tall. I remember when we were mounting in the gallery, we were all on scaffolding towers and cursing and swearing, like. Well, I mean, at the end of the day if you'd actually seen one of those things, okay it was a fish eater, but I would've run for cover because one swing of its tail and you'd have gone, you know.

**(TC: 00:31:48)**

**Moderator: It's one of my favourite things about Diplodocus is that it's tail they think it could generate a sonic boom because it's so long and so fine but there's people who say that it could whip crack it, like a whip.**

(TC: 00:32:02)

Adie Doyle: Yes but isn't that different, I mean, when I joined the museum in '79, so I've worked 41 years now, Dippy as we call him, I used to look after Dippy in the NHM, that was one of my jobs because people were always trying to nick bits off it. It had a very heavy tail and everybody thought these creatures were very stupid and lumber some and all the rest of it and then over a period of time they realised that the tail probably didn't drag on the ground, that they actually held them up. So, we recreated the tail, it was recast.

**(TC: 00:32:30)**

**Moderator: It went over your head I remember.**

(TC: 00:32:31)

Adie Doyle: It went over your head so you could actually look underneath it.

**(TC: 00:32:35)**

**Moderator: When I think back in, like, the '80s and '90s and stuff they initially thought that it's legs were sideways, you know, like a lizard would, I think that's how they envisaged they did it.**

(TC: 00:32:42)

Adie Doyle: Yes. Well, I mean, have you ever seen the dinosaur replicators in the Crystal Palace?

**(TC: 00:32:47)**

**Moderator: Yes, I've got the Megalosaurus as the logo for the podcast and unfortunately that's the one with the damage now, I don't know if you saw that.**

(TC: 00:32:54)

Adie Doyle: That's the one that was damaged. I was so angry about that because they're beautiful, okay they're wrong, I mean, they've got the iguanodon with the thumb spike on it's nose as far as I remember. No, I was very upset when they were damaged because I think they're grade two listed, I don't know.

**(TC: 00:33:08)**

**Moderator: Yes. If you look at all the old photos there is a big crack there so it would only take a tap anyway, so it could've been somebody throwing a ball for all we know.**

(TC: 00:33:16)

Adie Doyle: Yes. I mean, they're hollow. I went there donkey's years ago with some colleagues with the reptile fossil department and we had a look at them because as a conservator I knew a little bit about concrete and things like that. You could see the metalwork inside rusting so, I mean, for their age ultimately they really ought to be in a walloping great greenhouse to keep the elements off them but who's going to pay for things like that.

**(TC: 00:33:39)**

**Moderator: It's a shame. Well, anyway if you want to listen to my podcast it's Terrible Lizards.co.uk.**

(TC: 00:33:43)

Adie Doyle: I will indeed.

**(TC: 00:33:44)**

**Moderator: It's a by a very nice friendly palaeontologist called Doctor David Holme, he's good.**

(TC: 00:33:50)

Adie Doyle: David Holme, that rings a bell.

**(TC: 00:33:52)**

**Moderator: He's with St Mary's University.**

(TC: 00:33:53)

Adie Doyle: Yes, I've met in the past but he wouldn't know me, I would've met in the past.

**(TC: 00:33:58)**

**Moderator: So, thanks once again to Adie Doyle there. Do take a look at the future of digital membership events which are on The British Museum website and also check out the collection and also check out Terrible Lizards my new podcast. We hope you are staying safe and well and following lockdown guidelines and until next month goodbye. You've been listening to The British Museum Membercast with my Iszi Lawrence, to find out more please visit British Museum.org. To support the show share this episode with your friends and on social media. You can contact us using the hashtag Membercast or email friends@britishmuseum.org. To find out more about me please visit Iszi.com. We'll see you next month.**