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Peer-reviewed journals

Finch K, Sach F, Fitzpatrick M, **Masters N** and Rowden LJ (2020) Longitudinal Improvements in Zoo-Housed Elephant Welfare: A Case Study at ZSL Whipsnade Zoo. *Animals*, 10, 0; doi:10.3390/ani10110000

Folly AJ, Lawson B, Lean FZX, McCracken F, Spiro S, John SK, Heaver JP, Seilern-Moy K, **Masters N**, Hernandez-Triana LM, Phipps LP, Nunez A, Fooks AR, Cunningham AA, Johnson N, McElhinney LM (2020) Detection of Usutu virus infection in wild birds in the United Kingdom, 2020. *Eurosurveillance*, 25(41): 1.

Flach EJ, LeNette-Dawson D, Greig DR, Ismail Ahmed A, Jenkins C, John SK, Macgregor SK, **Masters N**, Stidworthy MF, Zimmerman B, Chattaway MA (2020) Isolation and characterisation of *Vibrio cholerae* from fish examined postmortem at ZSL London Zoo between 2014 and 2018. *The Veterinary Record*, doi:10.1136/vr.105682.

Molenaar FM, Burr PD, Swift BMC, Rees CED, **Masters N** (2020) Conservation challenges: The limitations of antemortem tuberculosis testing in captive Asiatic lions (*Panthera leo persica*). *Journal of Zoo and Wildlife Medicine*, 51(2): 426–432.

Chatterton J, Pas A, Alexander S, Leech M, Uddstrom L, Harvey C, **Masters N**, Dennison S, Roe WD (2020) Mycobacterial disease and subsequent diagnostic investigations in a group of captive pinnipeds in New Zealand. *Journal of Zoo and Wildlife Medicine*, 51(1): 177–187.

England ME, Pearce-Kelly P, Brugman VA, King S, Gubbins S, Sach F, Sanders CJ, **Masters NJ**, Denison E, Carpenter S (2020) *Culicoides* species composition and molecular identification of host blood meals at two zoos in the UK. *Parasites & Vectors*, 13:139. <https://doi.org/10.1186/s13071-020-04018-0>

Jayson S, **Masters N**, Strike T, Rendle M, Peters LM, Bates N (2020) Successful management of Heinz body hemolytic anemia associated with leek (*Allium ampeloprasum*) ingestion in a South American coati (*Nasua nasua*). *Journal of Veterinary Emergency and Critical Care*, 30: 86–91. <https://doi.org/10.1111/vec.12912>

Flach EJ, Feltrer Y, Gower DJ, Jayson S, Michaels CJ, Pocknell A, Rivers S, Perkins M, Rendle ME, Stidworthy MF, Tapley B, Wilkinson M, **Masters N** (2019) Postmortem findings in eight species of captive caecilian (Amphibia: Gymnophiona) over a ten-year period. *Journal of Zoo and Wildlife Medicine*, 50(4): 879-890.

Peters H, Sadaula A, **Masters N**, Sainsbury A (2019) Risks from disease caused by *Mycobacterium orygis* as a consequence of Greater one-horned Rhinoceros (*Rhinoceros unicornis*) translocation in Nepal. *Transboundary and Emerging Diseases*, 00:1–13. <https://doi.org/10.1111/tbed.13389>

Sach F, Fitzpatrick M, **Masters N**, Field D (2019) Financial planning required to keep elephants in zoos in the United Kingdom in accordance with the Secretary of State Standards for Modern Zoo Practice for the next 30 years. *International Zoo Yearbook*, 53: 78–88. <https://doi.org/10.1111/izy.12213>

Flach EJ, Dagleish MP, Feltrer Y, Gill IS, Marschang RE, **Masters N**, Oros J, Pocknell A, Rendle ME, Strike T, Tapley B, Wheelhouse NM (2018) Ferlavirus-related deaths in a collection of viperid snakes. *Journal of Zoo and Wildlife Medicine* 49(4): 983-995.

Asquith-Barnes HA, Sambrook L, **Masters NJ**, Kertesz P, Molenaar FM (2017) Operant conditioning facilitates safe induction and appropriate positioning for molar extraction under general anaesthetic in an Asian elephant (*Elephas maximus*) *Veterinary Record Case Reports* 5: e000455. doi: 10.1136/vetreccr-2017-000455

Tapley B, Bielby J, Böhm M, Brookes L, Capel T, Capon-Doyle JS, Chen S, Cliffe A, Clifforde L, Couchman O, Cunningham AA, Feltrer Y, Ferguson A, Flach E, Franklin M, Garner T, Gill I, Gray CL, Gumbs R, Guthrie A, Jaffe J, Jayson S, Harding L, Hudson M, Kane D, Korn J, Lawson B, MacIntosh H, **Masters N**, Maunders T, Molenaar F, Michaels CJ, Moxey T, Murray C, Owen N, Pearce-Kelly P, Rendle M, Sainsbury T, Sergeant C, Servini F, Sparrow S, Strike T, Thomas S and Turvey S (2017) Zoological Society of London: contributions towards advancing the field of herpetology through conservation, research, captive management and education. *The Herpetological Bulletin* 139: 1-6

Franklinos LHV, **Masters N**, Feltrer Y, Pocknell A, Bolt DM, Dakin S, Berry K, Molenaar FM (2017) The management of an oral anaplastic sarcoma in a pygmy hippopotamus (*Choeropsis liberiensis*) using intralesional chemotherapy. *Journal of Zoo and Wildlife Medicine* 48(1): 260-264.

Metz O, Williams J, Nielsen RK and **Masters N** (2017) Retrospective study of mortality in Asiatic lions (*Panthera leo persica*) in the European breeding population between 2000 and 2014. *Zoo Biology* 36: 66–73. doi:10.1002/zoo.21344

Vaughan-Higgins RJ, **Masters N**, Sainsbury AW (2016) Biosecurity for Translocations: Cirl Bunting (*Emberiza cirius*), Fisher's Estuarine Moth (*Gortyna borelii lunata*), Short-Haired Bumblebee (*Bombus subterraneus*) and Pool Frog (*Pelophylax lessonae*) Translocations as Case Studies. *Ecohealth* doi: 10.1007/s10393-016-1150-8.

Masters NJ, Alexander S, Jackson B, Sigler L, Chatterton J, Harvey C, Gibson R, Humphrey S, Rawdon TG, Spence RP, Ha HJ, McInnes K and Jakob-Hoff R (2016) Dermatomycosis caused by *Paranannizziopsis australasiensis* in five

tuatara (*Sphenodon punctatus*) and a coastal bearded dragon (*Pogona barbata*) in a zoological collection in New Zealand. *New Zealand Veterinary Journal* (Published online – DOI: 10.1080/00480169.2016.1177473).

Kendall R, Howard L, **Masters N**, Grant R (2016) The impact of elephant endotheliotropic herpesvirus on the captive Asian elephant (*elephas maximus*) population of the United Kingdom and Ireland (1995-2013). *Journal of Zoo and Wildlife Medicine*, 47(2): 405–418.

Denk D, Boufana B, **Masters NJ**, Stidworthy MF (2016) Fatal echinococcosis in three lemurs in the United Kingdom – a case series. *Veterinary Parasitology* 218: 10-14.

Molenaar FM, Piercy RJ, Dunkel B, Manning N, English K, Stidworthy M, **Masters NJ** (2016) Equine atypical myopathy associated with sycamore seed ingestion in a Przewalski foal. *Journal of Zoo and Aquarium Research* 4(2): 105-108.

Bobadilla Suarez M, Ewen JG, Groombridge JJ, Beckmann K, Shotton J, **Masters N**, Hopkins T and Sainsbury AW (2015) Using qualitative disease risk analysis for herpetofauna conservation translocations transgressing ecological and geographical barriers. *EcoHealth*. DOI: 10.1007/s10393-015-1086-4.

van den Doel PB, Rodríguez Prieto V, van Rossum-Fikkert SE, Schaftenaar W, Latimer E, Howard L, Chapman S, **Masters N**, Osterhaus ADME, Ling PD, Dastjerdi A and Martina B (2015) A novel antigen capture ELISA for the specific detection of IgG antibodies to elephant endotheliotropic herpes virus. *BMC Veterinary Research* 11:203. DOI 10.1186/s12917-015-0522-6.

Quintavalle Pastorino G, Albertini M, Carlsen F, Cunningham AA, Daniel BA, Flach E, Hofer H, Junhold J, Kock R, Leather S, **Masters N**, Preziosi R, Routh A, Sainsbury AW, Sato Y, Spencer W, Pearce-Kelly P (2015) Project MOSI: rationale and pilot-study results of an initiative to help protect zoo animals from mosquito-transmitted pathogens and contribute data on mosquito spatio-temporal distribution change. *International Zoo Yearbook* DOI:10.1111/izy.12065.

Tapley B, Bryant Z, Grant S, Kother G, Feltre Y, **Masters N**, Strike T, Gill I, Wilkinson M, Gower DJ (2014) Towards evidence-based husbandry for caecilian amphibians: Substrate preference in *Geotrypetes seraphini* (Amphibia: Gymnophiona: Dermophiidae). *The Herpetological Bulletin*, 129, p15-18.

Allan K, **Masters N**, Rivers S, Berry K, Routh A, Lamm C (2013) T-lymphocyte-rich Thymoma and Myasthenia Gravis in a Siberian Tiger (*Panthera tigris altaica*). *Journal of Comparative Pathology* DOI:10.1016/j.jcpa.2013.11.204.

Mumby C, Bouts T, Sambrook L, Danika S, Rees E, Parry A, Rendle M, **Masters N**, Weller R (2013) Validation of a new radiographic protocol for Asian elephant feet and description of their radiographic anatomy. *Veterinary Record* DOI:10.1136/vr.101696.

Boufana B, Stidworthy MF, Bell S, Chantrey J, **Masters N**, Unwin S, Wood R, Lawrence RP, Potter A, McGarry J, Redrobe S, Killick R, Foster AP, Mitchell S,

Sako Y, Nakao M, Ito A, Wyatt K, Lord B, Craig PS (2012) *Echinococcus* and *Taenia* spp. from captive mammals in the United Kingdom. *Veterinary Parasitology*, 190(1-2), p95-103.

Bolton RL, **Masters NJ**, Milham P, Lea RG (2012) Environment and reproductive dysfunction in captive female great apes (*Hominidae*). *Veterinary Record*, published online May 5, 2012 then 170(26), p676.

Masters NJ, Stidworthy MF, Everest DJ, Dastjerdi A, Bäumler S (2011) Detection of EGHV-5 in a self-limiting papilloma-like lesion in the trunk of an Asian elephant (*Elephas maximus*). *Veterinary Record*, published online July 18, 2011 then 169(8), p209.

Masters NJ, Niphuis H, Verschoor E, Breuer J, Quinlivan M, Wawrzynczyk T, Stidworthy MF (2010) Debilitating clinical disease in a wild-born captive Western Lowland gorilla (*Gorilla gorilla gorilla*) co-infected with varicella zoster virus (VZV) and simian T-lymphotrophic virus (STLV). *Journal of Zoo and Wildlife Medicine*, 41(4), p713-716.

Matas M, Wise I, **Masters NJ**, Stewart J, Holloway A, Donaldson D, Hartley C (2010) Unilateral eyelid lesion and ophthalmologic findings in an armadillo (*Oryzomys afer*): Case report and literature review. *Veterinary Ophthalmology*, 13, Supplement 1, 116 – 122.

Masters NJ, Burns FM, Lewis JCM (2007) Peri-anaesthetic and Anaesthetic-Related Mortality Risks in Great Apes (*Hominidae*) in Zoological Collections in the UK and Ireland. *Veterinary Anaesthesia and Analgesia*, 34 (6), pp 431 – 442.

Book chapters

Nevin T, Cracknell J, **Masters N** & Hayton A (2020) *Megafauna* in: Animal Osteopathy, Eds: Nevin T, Colles C, Tozzi P, Handspring, East Lothian, p 405 – 447.

Masters NJ & Flach E (2015) *Tragulidae, Moschidae, and Cervidae* in: Zoo and Wild Animal Medicine (Volume 8) Eds: Miller RE & Fowler ME, Elsevier, St. Louis, p 611-625.

Masters NJ (2009) *Primates (lemurs, callitrichids, cebids)* in: BSAVA Manual of Exotic Pets (Fifth edition), BSAVA Publishing.

Letters and other

Koldewey H, Christie S, Curnick D, Hoffmann M, **Masters N**, Pearce-Kelly P, Rowden L, Tapley B, Terry A (2020) A response to Welden et al. (2020) The contributions of EAZA zoos and aquaria to peer-reviewed scientific research. *Journal of Zoo and Aquarium Research* 8(2), p 133-138

Stidworthy MF, Lewis JCM, **Masters NJ**, Boardman SI, Hopper JS, Lopez de Linan FJ, Redrobe SP, Sayers G (2009) *Capillaria hepatica* in primates in zoological collections in the British Isles. Letters in *Veterinary Record*, 164(2), p 66.

Jones JS, **Masters NJ**, Hooley J (2008) Setting up a nutrition research programme at Twycross Zoo. *EAZA News Zoo Nutrition* 4, p 18.

Conference proceedings

Masters NJ, Burr P, Swift B, Molenaar F (2019) Mycobacterium tuberculosis complex diagnostics in Asiatic lion (*Panthera leo* spp. *persica*). Proceedings of the Zoo and Wildlife Health Conference 2019, Kolmarden.

Masters NJ, Bowden CGR, Parry-Jones J, Routh A, Deori P, Pradhan N, Cunningham AA, Green R, Galligan T, Pain DJ, Prakash N, Prakash V (2017) A multi-disciplinary approach to the conservation of *Gyps* vultures in South Asia – a role for veterinary professionals. Proceedings of the Asian Society of Conservation Medicine 2017, Kuching.

Masters NJ (2016) ZSL and Wildlife Health – A New Strategic Priority. Proceedings of the Asian Society of Conservation Medicine 2016, Taipei.

Masters N & Berry K (2014) Providing learning experiences for Masters students, veterinary undergraduates, veterinary nurses & others in zoological medicine. Proceedings of BVZS Autumn Meeting 2014, Lancaster.

Masters N, Franklinos L, Feltrer Y, Pocknell A, Bolt D, Smith S, Molenaar FM (2014) Successful chemotherapy of an oral anaplastic sarcoma in a pygmy hippopotamus (*Hexaprotodon liberiensis*). Proceedings of the International Conference on Diseases of Zoo and Wild Animals 2014, Warsaw.

Dodds J, Feltrer Y, **Masters N**, Shave R, Nibblet R, Somauro J, Modi S (2013) Implantable loop recorders (ILRs) for the diagnosis of cardiac disease in chimpanzees. Proceedings of BVZS Autumn Meeting 2013, Luton.

Masters N, Turner A, Minch S, Vanlerberghe S, Sambrook L, Weller R (2013) The development of standardised systems for scoring feet and locomotion in captive elephants in the UK and Ireland. Proceedings of BVZS Spring Meeting 2013, Cambridge.

Masters NJ, Gibson R, Harvey C, Jackson B (2012) Dermatomycosis caused by a *Chrysosporium* species in a captive tuatara (*Sphenodon punctatus*) In New Zealand. Proceedings of the International Conference on Diseases of Zoo and Wild Animals 2012, Verona.

Colvile K, Vaughan-Higgins RJ, Molenaar F, **Masters N**, Ewen J, Sainsbury AW (2012) Developing diseases risk analysis methodology for reintroduction projects. 3rd European Congress of Conservation Biology, Glasgow, September 2012.

Masters N, Ford M, Cracknell J, Hale G, Evans K (2011) '...and said goodbye to the circus': Veterinary assessment and care of Anne the elephant. Proceedings of BVZS Autumn Meeting 2011, Cheshire.

Masters NJ, Fry B, Yon L, Wade C, Clarke AG (2010) The Frozen Ark project – how vets working in zoos and aquariums can assist. Proceedings of the International Conference on Diseases of Zoo and Wild Animals 2010, Madrid.

Masters NJ (2010) The Frozen Ark project – how vets working in zoos and aquariums can assist. Proceedings of BVZS Spring Meeting 2010.

Bolton R, Lea R, Yon L, **Masters NJ** (2010) A preliminary survey of reproductive dysfunction in captive female great apes. Proceedings of BVZS Spring Meeting 2010.

Masters NJ, Spalton J, Stidworthy MF, Cobb M (2009) Hypertension in captive brown woolly monkeys (*Lagothrix lagotricha*) – a case series. Proceedings of BVZS Autumn Meeting 2009.

Stidworthy MF, Fry B, **Masters NJ** (2009). Endometriosis in an owl-faced monkey (*Cercopithecus hamlyni*). Proceedings of BVZS Autumn Meeting 2009.

Masters NJ, Stidworthy MF (2008) Dissecting aortic aneurysm in a L'Hoest's monkey (*Cercopithecus lhoesti*). Proceedings of BVZS Autumn Meeting 2008, p 55.

Masters NJ, Niphuis H, Breuer J, Quinlivan M, Wawrzynczyk T, Stidworthy MF (2008) Debilitating clinical disease in an STLV (Simian T-Lymphotropic virus) positive gorilla (*Gorilla gorilla gorilla*). Proceedings of BVZS Spring Meeting 2008, p18.

Masters NJ, Stidworthy MF, Lewis JCM, Greenwood AG, Gopal R (2007) First confirmed outbreak of Callitrichid Hepatitis / LCMV at a zoo in the UK: Preliminary results. Proceedings of BVZS Autumn Meeting 2007, p 50.

Lewis JCM, **Masters NJ** (1999) Isoflurane & air – an anaesthetic heresy? Proceedings of BVZS Meeting 1999, p 4.

Conference proceedings

Sainsbury AW, Amin R, Anderson NE, Kock RA, Malik PK, **Masters N**, Meredith A, Nigam P, Thomas AS, Waters M (2017) The Wildlife Health Bridge: Education in Wildlife Health for Biodiverse Countries. Tanzania Wildlife Research Institute Scientific Conference 2017, Arusha.

Masters NJ, Spalton JC, Stidworthy MF, Sansom J, White K, Cobb M (2010) Diagnosis, treatment and monitoring of hypertension in a collection of captive brown woolly monkeys (*Lagothrix lagotricha*). International Conference on Diseases of Zoo and Wild Animals, 2010, Madrid.

Kafarnik C, Stewart J, **Masters NJ**, Wise I, Hartley C, Donaldson D (2010) Septic implantation syndrome of the lens: A case report in a black and white ruffed lemur (*Varecia variegata variegata*). Annual Scientific Meeting of the European College of Veterinary Ophthalmologists (ECVO), 2010, Berlin.