註

■P104～、飼育下パンダの個体特性が野生復帰後の生存に及ぼす影響

1 Seddon P J, Armstrong D P, Maloney R F. Developing the science of reintroduction biology[J]. Conservation Biology, 21(2): 303-312. 2007.

2 Beck b b, Rapaport L G, Wilson A C. Reintroduction of captive-born animals[C]// Mace GM, Onley PJS, Feistner ATC(Eds.). Creative Conservation. London: Chapman & Hall, 265-286. 1994.

3 Mathews F, Orros M, McLaren G, et al. Keeping fit on the ark:assessing the suitability of captive-bred animals for release[J]. Biological Conservation, 121: 569-577. 2005.

4 Hakansson J, Jensen P. Behavioural and morphological variation between captive populations of red junglefoul(Gallusgallus)-possible implications for conservation[J]. Biological Conservation, 122: 431-439. 2005.

5 田紅, 魏栄平, 張貴権, 等. 伝統圏養和半自然散放环境亜成年大熊猫的行為差异[J]. 動物学研究, 25(2):137-140. 2004.

6 周小平. 圏養大熊猫行為研究及方法[M]. 成都:四川科学技術出版社. 2005.

7 周小平, 譚迎春, 宋仕賢, 等. 圏養大熊猫在獣舎与半野外条件下的行為和習性的初歩比较[J]. 四川動物, 24(2):143-146. 2005.

8 劉定震, 張貴権, 魏栄平, 等. 性別与年齢対圏養大熊猫行為的影响[J]. 動物学報, 48(5): 585-590. 2002.

9 Albers P C H, Timmermans P J A, Vossen J M H. Is maternal behavior correlated with later explorative behavior of young guinea pigs(Cavia aperea f. porcellus)[J]. Acta Ethologica, 2000(2)91-96.

10 張穎溢, 龍玉, 王昊, 等. 秦岭野生大熊猫(Ailuropodamelanoleuca)的覓食行為[J]. 北京大学学報:自然科学版, 2002, 38(4):476-486.

11 張志和, 魏輔文. 大熊猫迁地保護理论与実践[M]. 北京:科学出版社, 2006.

12 胡錦矗, Schaller G B, 潘文石, 等. 卧龍的大熊猫[M]. 成都:四川科学技術出版社, 1985.

13 侯佳, 徐光嵐, 車利锋, 等. 秦岭亜成体大熊猫在野化培訓基地適応期的行為視察[J]. 経済動物学報, 16(1):22-25. 2012.

14 周世強, 黄金燕, 劉 斌, 等. 野化培訓大熊猫食物利用率的初歩研究[J]. 四川林勘設計, (1):17-20. 2008.

15 周世強, 張和民, 李徳生. 大熊猫覓食行為的栖息地管理策略[J]. 四川動物, 29(3):340-345. 2010.

16 Bremner-Harrison S, Prodohl P A, Elwood R W. Behavioural trait assessment as a release cricerion:boldness predicts early death in a reintroduction programme of captivebred swift fox(Vulpes velox)[J]. Animal Conservation, 7:313-320. 2004.

17 Zidon R, Saltz D, Shore L S, et al. Behavioral changes, stress, and survival following reintroduction of Persian Fallow Deer from two breeding facilities[J]. Conservation Biology, 23:1026-1035. 2009.

18 馮文和. 大熊猫的現状 大熊猫繁殖与疾病研究[M]. 成都:四川科学技術出版社, 1991:7-14.

19 李徳生, 張貴権, 魏栄平, 等. 大熊猫种公獣培育研究進展[J]. 四川動物, 20(3):148-151. 2001.

20 張和民, 王鵬彦, 張貴権, 等. 大熊猫繁殖研究[M]. 北京:中国林業出版社, 2003.

21 李徳生, 黄炎, 周世強, 等. 卧龍圏養大熊猫母獣帯仔野化培訓[J]. 生物学通報, 46(7):13-15. 2011.

22 Shier D M, Owings D H. Effects of predator training on behavior and post-release suvival of captive prairie dogs (Cynomys ludovicianus)[J]. Biological Conservation, 132:126-135. 2006.

23 Stott G H. What is animal stress and how is it measured[J]. Journal of Animal Science, 52:150-153. 1981.

24 边疆晖, 吴雁. 哺乳動物的生理応激反応極其生态適応性[J]. 獣類学報, 2009, 29(4):352-358.

25 Dantzer R, Mormede P. Stress in farm animals:A need for reevaluation[J]. Journal of Animal Science, 57:6-18. 1983.

26 Teixeira C P, Azevedo C S, Mendl M, et al. Revisitingtranslocation and reintroduction programmes:the importance of considering stress[J]. Animal Behaviour, 73:1-13. 2007.

27 江燕, 張力跃, 田保平, 等. 野生猕猴応激与抗応激的研究[J]. 四川動物, 19(4):224-226. 2000.

28 古晓東, 王鸿加, 張陕宁, 等. 放归大熊猫“盛林一号”的活働范囲和活働节律監測[J]. 四川動物, 30(4):493-497. 2011.

■P120～、繁殖戦略と採食行動の相互メカニズム

1 胡錦矗, 夏勒, 潘文石, 等. 1985. 卧龍的大熊猫[M]. 成都: 四川科技出版社, 33-116. 1985.

2 Schaller GB, Hu JC, Pan WS, et al. The giant pandas of Wolong[M]. *University of Chicago Press*, Chicago, IL, 47-107. 1985.

3 胡錦矗. 大熊猫研究[M]. 上海: 上海科学技術和教育出版社, 63-117. 2001.

4 潘文石, 高鄭生, 吕植, 等. 秦岭大熊猫的自然庇護所[M]. 北京: 北京大学出版社, 129-182. 1988.

5 潘文石, 吕植, 朱小健, 等. 継続生存的机会[M]. 北京: 北京大学出版社, 2001.

6 唐小平, 賈建生, 王志臣, 等. 全国第四次大熊猫調查方案設計及主要結果分析[J]. 林業資源管理, 2015(1):13-16.

7 胡璐. 全球大熊猫圏養総数达到 633 只[Z]. 新華網, 2020.12. 31. http://www.xinhuanet.com/2020-12/31/c_1126932940.htm.

8 Mainka SA, 吕植. 大熊猫放帰野外可行性国際研討会会議報告[M]. 北京: 中国林業出版社, 1999.

9 張泽鈞, 張陕宁, 魏輔文, 等. 移地与圏養大熊猫野外放帰的探討[J]. 獣類学報, 26(3):292-299. 2006.

10 胡錦矗. 大熊猫生物学研究与進展[M]. 成都: 四川科技出版社, 1992.

11 張和民, 王鵬彦, 李德生, 等著. 大熊猫繁殖研究[M]. 北京: 中国林業出版社, 2003.

12 王鵬彦, 李德生, 張和民, 著. 大熊猫飼養管理[M]. 北京: 中国林業出版社, 2003.

13 周小平, 王鵬彦, 張和民, 等. 圈養大熊猫行為研究及其方法[M]. 成都: 四川科技出版社, 2005.

14 張志和, 魏輔文. 大熊猫迁地保護理论与実践[M]. 北京: 科学出版社, 2006.

15 赵学敏. 大熊猫研究進展[M]. 北京: 科学出版社, 2007.

16 方盛国, 張和民, 熊鉄一, 等. 大熊猫進化歴史与保護工程[M]. 北京: 科学出版社, 2017.

17 魏輔文, 胡錦矗. 卧龍自然保護区野生大熊猫繁殖研究[J]. 獣類学報, 14(4):243-248. 1994.

18 Zheng HM, Li DS, Wang CD, et al. Delayed implantation in giant pandas the first comprehensive empirical evidence[J]. Reproduction, 138: 979-986. 2009.

19 Zhu XJ, Lindburg DG, Pan WS, et al. The reproductive strategy of giant panda (Ailurepoda melanolenca): infant growth and development and mother-infant relationship[J]. *Journal of Zoology London*, 253: 141-155. 2001.

20 Monfort SL, Dahl KD, Czekala NM, et al. Monitoring ovarian function and pregnancy in the giant panda (Ailuropoda melanoleuca) by evaluating urinary bioactive FSH and steroid metabolites[J]. *Journal of Reproduction and Fertility*, 85: 203-212. 1989.

21 曾国庆, 張星, 蒋広泰, 等. 大熊猫生殖生物学研究: II. 大熊猫妊娠期尿中孕酮和絨毛膜促性腺激素样物質含量的変化[J]. 働物学報, 38(4):429-434. 1992.

22 Sutherland-Smith M, Morris PJ, Silverman S. Pregnancy detection and fetal monitoring via ultrasound in a giant panda (Ailuropoda melanoleuca)[J]. Zoo Biology, 23: 449-461. 2004.

23 Wei FW, Swaisgood RR, Hu YB, et al. 2015. Progress in the ecology and conservation of giant pandas[J]. Conservation Biology, 29(6):1497-1507.

24 Reid DG, Hu JC. Giant panda selection between Bashania fangiana bamboo habitats in Wolong Nature Reserve, Sichuan, China[J]. Journal of Applied Ecology, 28(1): 228-243. 1991.

25 魏輔文, 周材权, 胡錦矗, 等. 馬边大風頂自然保護区大熊猫対食物資源的选择利用[J]. 獣類学報, 16(3):171-175. 1996.

26 周材权, 胡錦矗, 袁重桂, 等. 馬边大風頂自然保護区大熊猫的食性与採食行為[J]. 四川師範学院学報(自然科学版), 18(4):273-277. 1997.

27 雍厳格, 王寛武, 汪鉄軍. 佛坪大熊猫的移働習性[J]. 獣類学報, 1994, 14(1):9-14.

28 Liu XH, Skidmore AK, Wang TJ, et al. Giant panda movements in Foping Nature Reserve, China[J]. Journal of Wildlife Management, 66(4): 1179-1188. 2002.

29 Zhang ZJ, Sheppard JK, Swaisgood RR, et al. Ecological Scale and Seasonal Heterogeneity in the Spatial Behaviors of Giant Pandas[J]. Integrative Zoology, 9:46-60. 2014.

30 Liu XH, Wang TJ, Wang T, et al. How do two giant panda populations adapt to their habitats in the Qinling and Qionglai Mountains, China[J]. Environment Science and Pollution Research, 22: 1175-1185. 2015.

31 Nie YG, Zhang ZJ, Raubenheime RD, et al. Obligate herbivory in an ancestrally carnivorous lineage: the giant panda and bamboo from the perspective of nutritional geometry[J]. Functional Ecology, 29(1): 26-34. 2015.

32 胡杰, 胡錦矗, 屈植彪, 等. 黄龍大熊猫対華西箭竹选择与利用的研究[J]. 働物学研究, 21(1):48-51. 2000.

33 劉雪華, 王亭, 王鵬彦, 等. 無线电颈圈定位数据応用于卧龍大熊猫移働規律的研究[J]. 獣類学報, 28(2): 180-186. 2008.

34 Hull V, Zhang JD, Zhou SQ, et al. Space use by endangered giant pandas[J]. *Journal of Mammalogy*, 96(1): 230-236. 2015.

35 Zhang JD, Hull V, Huang JY, et al. Activity patterns of the giant panda (*Ailuropoda melanoleuca*)[J]. *Journal of Mammalogy*, 96(6): 1116-1127. 2015.

36 張文広, 張文広, 唐中海, 等. 大相岭北坡大熊猫生境适宜性评价[J]. 獣類学報, 27(2): 146-152. 2007.

37 秦自生, 艾伦·泰勒, 蔡绪慎. 卧龍大熊猫生態环境的竹子与森林働態演替[M]. 北京: 中国林業出版社, 1-389. 1993.

38 卧龍自然保護区管理局, 南充師範学院生物系, 四川省林業厅保護処. 卧龍植被及資源植物[M]. 成都: 四川科技出版社, 27-179. 1987.

39 易同培. 四川竹類植物志[M]. 北京: 中国林業出版社, 1997: 1-10.

40 四川省林業厅. 四川的大熊猫-四川省第四次大熊猫調查報告[M]. 成都: 四川科学技術出版社, 2015: 57-73.

41 史志嶌. 甘肃省第四次大熊猫調查報告[M]. 兰州: 甘肃科学技術出版社, 2016: 36-42.

42 周国灵. 秦岭大熊猫-陕西省第四次大熊猫調查報告[M]. 西安: 陕西科学技術出版社, 2017: 36-43.

43 胡錦矗, 韦毅, 周昂. 馬边大風頂自然保護区大熊猫覓食行為与営養対策[J]. 四川師範学院学報(自然科学版), 15(1): 44-51. 1994.

44 唐平, 周昂, 李超, 等. 冶勒自然保護区大熊猫摂食行為及営養対策初探[J]. 四川師範学院学報(自然科学版), 18(1):1-4. 1997.

45 周世強, 張和民, 李德生. 大熊猫覓食行為的栖息地管理策略[J]. 四川働物, 29(3): 340-345. 2010.

46 魏輔文. 大熊猫演化保護生物学研究[J]. 中国科学:生命科学, 48(10): 1048-1053. 2018.

47 Williams CL, Willard S, Kouba A, et al. Dietary shifts affect the gastrointestinal microflora of the giant panda (Ailuropoda melanoleuca)[J]. *Animal physiology and annual nutrition*, 97(3): 577-585. 2013.

48 Wu Q, Wang X, Ding Y, et al. Seasonal variation in nutrient utilization shapes gut microbiome structure and function in wild giant pandas[J].*Proceedings of the Royal Society B:Biological Sciences*, 2017: 284.

49 Li YX, Swaisgood RR, Wei W, et al. Withered on the stem: is bamboo a seasonally limiting resource for giant pandas[J]. *Environmental Science and Pollution Research*, 24: 10537-10546. 2017.

50 He X, Hsu WH, Hou R, et al. Comparative genomics reveals bamboo feeding adaptability in the giant panda (*Ailuropoda melanoleuca*)[J].ZooKeys, 923: 141-156. 2020.

51 周世強, 張晋东, Hull V, 等. 野生大熊猫与放牧家畜採食竹子行為的比較[J]. 応用与环境生物学報, 27(05): 1-10. 2021.

52 Zhang MC, Zhang ZZ, Li Z, et al. Giant panda foraging and movement patterns in response to bamboo shoot growth[J]. *Environmental Science and Pollution Research*, 25: 8636-8643. 2018.

53 魏輔文, 胡錦矗, 王维, 等, 馬边大風頂自然保護区大熊猫能量摂入和食物資源能量估算[J]. 獣類学報, 17(1): 8-12. 1997.

54 何礼, 魏輔文, 王祖望, 等. 相岭山系大熊猫的営養和能量対策[J]. 生態学報, 10(2): 177-183. 2000.

55 Hansen RL, Carr MM, Apanavicius CJ, et al. Seasonal shifts in giant panda feeding behavior: Relationships to bamboo plant part consumption[J]. Zoo Biology, 28: 1-14. 2009.

56 王逸之, 董文渊, Andrew Houba, 劉新玉. 巴山木竹笋和叶営養成分分析[J]. 林業科技开发, 26(6): 47-50. 2012.

57 張智勇, 王強, 付強, 等. 邛崃山系 3 种主食竹単宁及営養成分含量対大熊猫取食选择性的影响[J]. 北京林業大学学報, 34(6): 42-46. 2012.

58 王楽, 劉明, 張泽鈞, 等. 基于 PSMs-食草働物协同進化対竹子-大熊猫相互関系研究的启示[J]. 西華師範大学学報(自然科学版), 2015, 36(3):233-239.

59 李亜軍, 蔡琼, 劉雪華, 等. 海拔対大熊猫主食竹结构、営養及大熊猫季节性分布的影响[J]. 獣類学報, 36(1): 24-35. 2016.

60 王丹林, 郭庆学, 王小蓉,等. 海拔対岷山大熊猫主食竹営養成分和氨基酸含量的影响[J]. 生態学報, 37(19):6440-6447. 2017.

61 董冰楠, 周宏, 張泽鈞, 等. 佛坪国家級自然保護区秦岭箭竹営養成分分析[J]. 獣類学報, 38(1): 14-20. 2017.

62 Huang Q, Liu X, Li Y, et al. 2018. Understanding nutrient landscapes for giant pandas in the Qinling Mountains, China: the relationships between bamboo mineral content and giant panda habitat selection during migration[J]. *Animal Biodiversity and Conservation*, 41(2): 195-208. 2018.

63 Liu H, Zhang, CL, Liu Y, et al. 2019. Total flavonoid contents in bamboo diets and reproductive hormones in captive pandas: exploring the potential effects on the female giant panda (*Ailuropoda melanoleuca*) [J]. Conservation. Physiology. 7 (1). 2019.

64 Nie YG, Wei FW, Zhou WL, et al. 2019. Giant Pandas Are Macronutritional Carnivores[J]. Current Biology, 29: 1677-1682. 2019.

65 Wang L, Yuan SB, Nie YG, et al. 2020. Dietary flavonoids and the altitudinal preference of wild giant pandas in Foping National Nature Reserve, China[J]. Global Ecology and Conservation Volume 22, June, 2020: e00981.

66 Shellby NJ, Rosafeld MJ. Methods for augmenting immune defense[P]. United State Patent, 2004/0209877A1. 2004.

67 郭慧君，韓正康，王国杰. 日粮中添加大豆黄酮対大鼠生长性能和有関内分泌的影响[J]. 南京农業大学学報, 24(4): 59-61. 2001.

68 栗明月，方洛云，苏汉書，等. 竹叶提取物対奶牛泌乳性能、血液常規指标、免疫和抗氧化性能的影响[J]. 働物営養学報, 31(7): 3302-3309. 2019.

69 Sanders EH, Gardner PD, Berger PJ, et al. 6-MBOA: A plant derivative that stimulates reproduction in Microtus montanus[J]. Science, 214: 67-69. 1981.

70 Nelson RJ, Blon JM. 6-Methoxy-2-benzoxazolinone and photoperiod: prenatal and postnatal influences on re-productive development in praivie voles (Microtus ochrogaster ochrogaster)[J]. Canada Journal of Zoology, 71: 776-789. 1993.

71 劉力寛，劉季可，苏建平. 6-MBOA 対植食性小哺乳類繁殖作用的研究進展[J]. 獣類学報, 18(1):60-67. 1998.

72 吴海兰，潘欣，余中亮，等. 基于非靶向代謝組学的大熊猫主食竹代謝産物分析[J]. 野生働物学報, 41(4): 851-860. 2020.

73 Cao MS, Li CJ, Liu YL, et al Assessing Urinary Metabolomics in Giant Pandas Using Chromatography-Mass Spectrometry-Pregnancy-Related Changes in the Metabolome[J]. Frontiers Endocrinology, 11: 215. doi: 10.3389/fendo.2020.00215. 2020.

74 ChowdhuryR, Islam KMS, Khan MJ, et al. Effect of citric acid, avilamycin and their combination on the performance, tibia ash, and immune status of broiler[J]. Poultry Science, 88(8): 1616-1622. 2009.

75 Huber J, Imhof M, Schmidt M. Effects of soy protein and isoflavones on circulating hormone concentrations in pre- and postmenopausal women: a systematic review and meta-analysis[J]. Human Reproduction Update, 16(1): 110-111. 2010.

76 Zhang YB, Li LN, Zhao XY, et al. Effect of soy isoflavone crude extract supplementation on high fat diet-induced insulin resistance in ovariectomized rats[J]. *Biomedical and Environmental Sciences*, 27(1): 49-51. 2014.

77 Horiuchi M, Takeda T, Takanashi H, et al. Branchedchain amino acid supplementation restores reduced insulinotropic activity of a low-protein diet through the vagus nerve in rats[J]. *Nutrition and Metabolism*, 14(1): 59. 2017.

78 Chen C, Wang YY, Wang YX, et al. Gentiopicroside ameliorates bleomycin-induced pulmonary fibrosis in mice via inhibiting inflammatory and fibrotic process[J]. *Biochemical and Biophysical Research Communications*, 495(4): 2396-2403. 2018.

■P132～、発情期におけるパンダの音声相互コミュニケーション

1 Krebs J, Davies N, Parr J. An Introduction to Behavioural Ecology. 3rd ed. London: Wiley-Blackwell, 349–374. 1993.

2 Hollen L I, Radford A N. The development of alarm call behaviour in mammals and birds. Anim Behav, 78: 791–800. 2009.

3 Marler P, Slabbekoorn H. Nature's Music: The Science of Birdsong. New York: Academic Press. 2004.

4 Naguib M, Janik V, Clayton N, et al. Vocal Communication in Birds and Mammals. New York: Academic Press. 2009.

5 Stumpner A, Von Helversen D. Evolution and function of auditory systems in insects. Naturwissenschaften, 88: 159–170. 2001.

6 Vergne A, Pritz M, Mathevon N. Acoustic communication in crocodilians: From behaviour to brain. Biol Rev, 84: 391–411. 2009.

7 Johnson M, de Soto N, Madsen P. Studying the behaviour and sensory ecology of marine mammals using acoustic recording tags: A review. Mar Ecol Prog Ser, 395: 55–73. 2009.

8 Taylor A, Reby D. The contribution of source-filter theory to mammal vocal communication research. J Zool, 280: 221–236. 2009.

9 Semple S. Individuality and male discrimination of female copulation calls in the yellow baboon. Anim Behav, 61: 1023–1028. 2001.

10 Semple S, McComb K, Alberts S, et al. Information content of female copulation calls in yellow baboons. Am J Primatol, 56: 43–56. 2002.

11 McComb K E. Female choice for high roaring rates in red deer, *Cervus elaphus*. Anim Behav, 41: 79–88. 1991.

12 McElligott A G, O'Neill K P, Hayden T J. Cumulative long-term investment in vocalization and mating success of fallow bucks, *Dama dama*. Anim Behav, 57: 1159–1167. 1999.

13 Macedonia J M, Evans C S. Variation among mammalian alarm call systems and the problem of meaning in animal signals. Ethology, 93: 177–197. 1993.

14 Sherman P W. Nepotism and the evolution of alarm calls. Science, 197: 1246–1253. 1977.

15 Caudron A K, Kondakov A A, Siryanov S V. Acoustic structure and individual variation of grey seal (*Halichoerus grypus*) pup calls. J Mar Biol Assoc UK, 78: 651–658. 1998.

16 Charrier I, Mathevon N, Jouventin P. How does a fur seal mother recognize the voice of her pup? An experimental study of *Arctocephalus tropicalis*. J Exp Biol, 205: 603–612. 2002.

17 Collins K T, Terhune J M, Rogers T L, et al. Vocal individuality of in-air weddell seal (*Leptonychotes weddellii*) pup "primary" calls. Mar Mammal Sci, 22: 933–951. 2006.

18 Phillips A V, Stirling I. Vocal individuality in mother and pup South American fur seals, *Arctocephalus australis*. Mar Mammal Sci, 16: 592–616. 2000.

19 Bradbury J W, Vehrencamp S L. Principles of Animal Communication. Sunderland, MA: Sinauer Associates. 1998.

20 Eisenberg J F, Kleiman D G. Olfactory communication in mammals. Annu Rev Ecol Syst, 3: 1–32. 1972.

21 Shen J X, Feng A S, Xu Z M, et al. Ultrasonic frogs show hyperacute phonotaxis to female courtship calls. Nature, 453: 914–916. 2008.

22 Ballentine B, Hyman J, Nowicki S. Vocal performance influences female response to male bird song: An experimental test. Behav Ecol, 15: 163–168. 2004.

23 Charlton B D, Huang Y, Swaisgood R R. Vocal discrimination of potential mates by female giant pandas (*Ailuropoda melanoleuca*). Biol Lett, 5: 597–599. 2009.

24 Charlton B D, Keating J L, Li R G, et al. Female giant panda (*Ailuropoda melanoleuca*) chirps advertise the caller's fertile phase. P Roy Soc B-Biol Sci, 277: 1101–1106. 2010.

25 Charlton B D, Zhang Z H, Snyder R J. Vocal cues to identity and relatedness in giant pandas (*Ailuropoda melanoleuca*). J Acoust Soc Am, 126: 2721–2732. 2009.

26 Charlton B D, Zhang Z H, Snyder R J. The information content of giant panda, *Ailuropoda melanoleuca*, bleats: Acoustic cues to sex, age and size. Anim Behav, 78: 893–898. 2009.

27 Peters G. A comparative survey of vocalization in the giant panda, Ailuropoda melanoleuca (David 1869). In: Klös H G, Frädrich H, eds. Proceedings of the International Symposium on the Giant Panda, Berlin, Germany, 197–208. 1985.

28 朱靖, 孟智斌. 大熊猫(*Ailuropoda melanoleuca*)発情期叫声及其行為意義. 動物学報, 1987, 33: 285–292

29 劉定震, 房継明, 孫儒泳, 等. 大熊猫个体不同性活跃能力的公費比較. 動物学報, 1998, 44: 27–34

30 Kleiman D G. Ethology and reproduction of captive giant pandas (*Ailuropoda melanoleuca*). Z Tierpsychol, 62: 1–46. 1983.

31 Kleiman D G, Peters G. Auditory communication in the giant panda: Motivation and function. In: Asakura S, Nakagawa S, eds. Proceedings of the Second International Symposium on Giant Panda. Tokyo: Tokyo Zoological Park Society, 107–122. 1990.

32 Peters G. A note on the vocal behavior of the giant panda (*Ailuropoda melanoleuca*). Int J Mamm Biol, 47: 236–246. 1982.

33 Schaller G B, Hu J, Pan W, et al. The Giant Pandas of Wolong. Chicago: *University of Chicago Press*.1985.

34 Liu D, Zhang G, Wei R, et al. Behavioral responsiveness of captive giant pandas (*Ailuropoda melanoleuca*) to substrate odors from conspecifics of the opposite sex. In: Mason R T, LeMaster M P, Müller-Schwarze D, eds. Chemical Signals in Vertebrates 10. New York: Springer, 101–109. 2005.

35 Swaisgood R, Lindburg D, Zhou X, et al. The effects of sex, reproductive condition and context on discrimination of conspecific odours by giant pandas. Anim Behav, 60: 227–237. 2000.

36 Liu D, Wang Z, Tian H, et al. Behavior of giant pandas (*Ailuropoda melanoleuca*) in captive conditions: Gender differences and enclosure effects. Zoo Biol, 22: 77–82. 2003.

37 Liu D, Yuan H, Tian H, et al. Do anogenital gland secretions of giant panda code for their sexual ability? Chin Sci Bull, 51: 1986–1995. 2006.

38 Liu D, Wei R P, Zhang G Q, et al. Male panda (*Ailuropoda melanoleuca*) urine contains kinship information. Chin Sci Bull, 53: 2793–2800. 2008.

39 Swaisgood R R, Lindburg D G, Zhang H. Discrimination of oestrous status in giant pandas (*Ailuropoda melanoleuca*) via chemical cues in urine. J Zool, 257: 381–386. 2002.

40 Tian H, Wei R P, Zhang G Q, et al. Age differences in behavioral responses of male giant pandas to chemosensory stimulation. Zool Res, 28: 134–140. 2007.

41 White A M, Swaisgood R R, Zhang H. Urinary chemosignals in giant pandas (*Ailuropoda melanoleuca*): Seasonal and developmental effects on signal discrimination. J Zool, 264: 231–238. 2004.

42 劉定震, 張貴権, 魏栄平, 等. 性別与年齢対圏養大熊猫行為的影响. 動物学報, 48: 585–590. 2002.

43 張和民, 王鵬彦, 張貴権, 等. 卧龍大熊猫保護及研究技術的進展. 四川動物, 2000, 19: 35–38

44 Kleiman D G. Social and reproductive behaviors of the giant panda (*Ailuropoda melanoleuca*). In: Klös H G, Frädrich H, eds. Proceedings of the International Symposium on the Giant Panda, Berlin, Germany, 45–58. 1985.

45 Swaisgood R R, Lindburg D G, Zhou X P. Giant pandas discriminate individual differences in conspecific scent. Anim Behav, 57: 1045–1053. 1999.