

Perspectives on “Nest construction and function 2012”

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In late 2011, following my increasing research interest into the workings of bird nests, I concluded that there had been a spate of literature dealing with bird nests. In a desire to learn more, preferably first-hand from researchers, I developed the idea of holding a conference dedicated to improving our understanding of bird nests. The idea was to bring together researchers from around the world who were dealing with the wide variety of aspects of nest construction and function. Preliminary contact with potential delegates showed that there was an interest in such a meeting and so I proceeded to make this idea a reality.

The meeting was held in September 2012 at the University of Lincoln, in the UK, and was attended by delegates from 12 different countries ranging from across

Europe, North America and Australia. Over the course of two-and-a-half days there were excellent presentations and discussions. I would like to offer my thanks to each of the delegates for attending the meeting and making it such a success. I am also grateful to those delegates who have contributed to the written Proceedings for their prompt responses to reviewers' or editorial changes. Many thanks go to the reviewers of manuscripts who helped so much.

There were some general themes that emerged from the presentations offered for the programme. The factors affecting the microclimate of the nest was one key area where studies had concentrated on cavity-nesting species. Some novel ideas were presented, for instance that in natural tree holes the presence of an active tit nest actually lowered the humidity of the chamber, which



NEST CONSTRUCTION AND FUNCTION 2012 PARTICIPANTS (LEFT TO RIGHT)

Back row: Mike Hansell, Joel Pick, René van Dijk, Tomasz Mazgajski, Jim Reynolds, Zach Hall, Dan Ardia, Daniel Hanley, Maurizio Sarà, Chris du Feu, Gerhardt Aubrecht, Helga Gwinner

Third row: Charles Deeming, Iga Gózdź, Eira Ihalainen, Glenn Baggott, Marta Mariarz, Jen Smith, Tomasz Wesolowski, Richard Broughton, Rachel Farrow

Second row: Juan Moreno, Iain Barber, Patrick Walsh, Aina Taberner, Jo Surgey, Ida Bailey, Felicity Muth, Caragh Heenan, Elena Álvarez (with Marcos)

Front row (seated): Dave Leech, Douglas Russell, Amos Ar, Sue Healy, Emilio Barba

only highlighted that we still know very little about the microclimate of most nest types and locations. Whether nests were constructed for their structural or insulative properties was also considered.

Another key area of research focuses on the behavioural aspects of nest construction and whether birds exhibit any cognitive ability when building apparently complex structures. One talk was on how stickleback fish construct their nests, which, by contrast to birds, seems to be a process that is well understood, and so provided a fantastic comparative aspect to future study of bird nests. The jury is still out about how the methods used by birds to build their nests but research will continue.

Nests are all too often seen as receptacles for eggs and chicks but nests are often seen as “signals” of other aspects of reproductive biology. Nest quality may act as key sexual signal in mate choice or play a role in communal nesting. Studies into more functional aspects of a nest suggested that how we define a nest is crucial in assessing its properties – the cup, which holds the eggs and chicks, may be subject to a completely set of “design rules” than the nest that defines and surrounds the cup.

How environmental factors impact on nest construction was a key topic. Not only were local climatic factors (*i.e.* temperature, precipitation and wind) important but more experimental factors, such as food supplementation, had roles to play in the decisions birds are making when building their nests. The implications of these factors were explored in terms of energetic costs of construction, incubation and rearing.

What materials are used in constructing nests proved interesting with evidence that geographical location can affect choice of material used by individuals. Moreover,

the chemical properties of those materials can provide additional benefits to their occupants. Green plant material may play a role in deterring arthropod ectoparasites, and some fungi may have anti-microbial properties.

Finally, it was interesting to have a presentation that encouraged scientists to use collections in museums in their studies of nests and their role in production. Some of the delegates took the opportunity after the meeting to visit the nest collection held by the Natural History Museum at Tring, north of London.

The meeting was a real success that stimulated a lot of constructive discussion and debate at the time. It was a pleasure to organise and attend such a great gathering of like-minded people. It must have been a positive experience for the delegates because they all seem to want to know when the next meeting would be! The written proceedings of the meeting are published in the next couple of issues of *Avian Biology Research* so that the presentations can be shared with other researchers who were unable to attend the meeting.

As for research into bird nests, the meeting confirmed to me that we have only scratched the surface of our understanding of the roles that nests play, how they are constructed, what materials are used and why they are chosen. How these decisions impact on reproductive success has yet to be fully considered. I hope that the delegates went home with the intention of continuing their work and extending our understanding of bird nest construction and function. Given the great diversity of birds around the world it is clear that research into nests can be highly productive the next few years and I am looking forward to attending the next meeting on “Nest Construction and Function” whenever that may be.