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PLENARY – WOOLHOUSE LECTURE

PL2.1

09:00 Monday 29th June 2009

What goes around, comes around; alternation of generation revisited

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Alternation of generation underpins all plant life histories and is held to possess important adaptive features. A wide range of data have accumulated over the past century which suggest that the alternation from sporophyte to gametophyte in angiosperms includes a significant phase of 'informational reprogramming', leaving the founder cells of the gametophyte developmentally uncommitted. In my talk I shall attempt to bring together results from these historic studies with more recent data on molecular and epigenetic events

which accompany alternation, gametophyte development and gametogenesis in angiosperms. It is striking that most members of the other principal group of multicellular eukaryotes – the animals – have a life history which differs strikingly from that of plants. Animals generate their gametes directly from diploid germlines, often set aside early in development. Nevertheless, a comparison between animal germlines and angiosperm gametophyte development reveals a number of surprising similarities at the cytological and molecular levels. This difference in life history but similarity in developmental process is reviewed in the context of the very different life strategies adopted by plants and animals, and particularly the fact that plants do not set aside diploid germlines early in development.

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