ntrolling such an apparently complex phenot
the elucidation of a fascinating developme
and tempo of speciation and macroevolution.

s disposes'

said. The recent renais-
ased on newly available
blogy is certainly demon-
e example is provided by
blished by Brakefield *et*
r is at the vanguard of a
search is the affiliation of
me from departments of
nces, Molecular Biology,
Biology. Such a variety
ve study of development
be called the 'black box'

ed on the development of
of the genus *Bicyclus*.
ns and colorations are
g to the differentiation of
nat carry them and have
n years. The implications
y developmental, but evo-

the background brown le
viously demonstrated tha
African species.

Gene regulation and p

But how is eyespot devel
respond to external env
ture? Pivotal to the answ
the isolation of three mu
the phenomenon, toget
expression of another p
Distalless is a homeobox
specifically restricted to
organizing center of the
eyespot development. I
struct antibodies agains
ble a precise mapping
Since this gene marks
expression is an ideal r
mine what aspects of
affected by other mutatio

w temperature (dry season form)
). Artificial selection is effective in
ve ways: selection for increased
the relationship, so that still more
but the dry form never appears;
other hand, resulted in a change
ce with respect to the wild type
f. 1).

ot in four stages, from the
r and position of the spots,
nd then also by *Cyclops*
nation of size and color,
bout the plasticity? The
elopmental window which
by determining the switch
to the 'wet-season' or the
y late, once stage III has
ed foci are signaling.

, and the other way

rom the organismal to the
een mirrored by an inverse
eld and colleagues have
the degree of seasonal

regulatory genes and
sive) genetic variation

Where is all this leac
ular tools and of mutan
ecular genetics for som
however, are starting t
alienated developmen
realm of ecology and
they evolve, and they d
to which they have to a
pendently of its enviro
'physics' approach) ha
in several cases has pu
poses, but epigenetics
genes with the extern
more we understand th
through that still fairly c

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