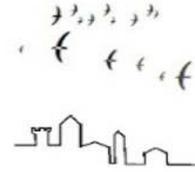




SWIFTS & FUN ! RONDONI IN FESTIVAL
sabato 28.06.2014



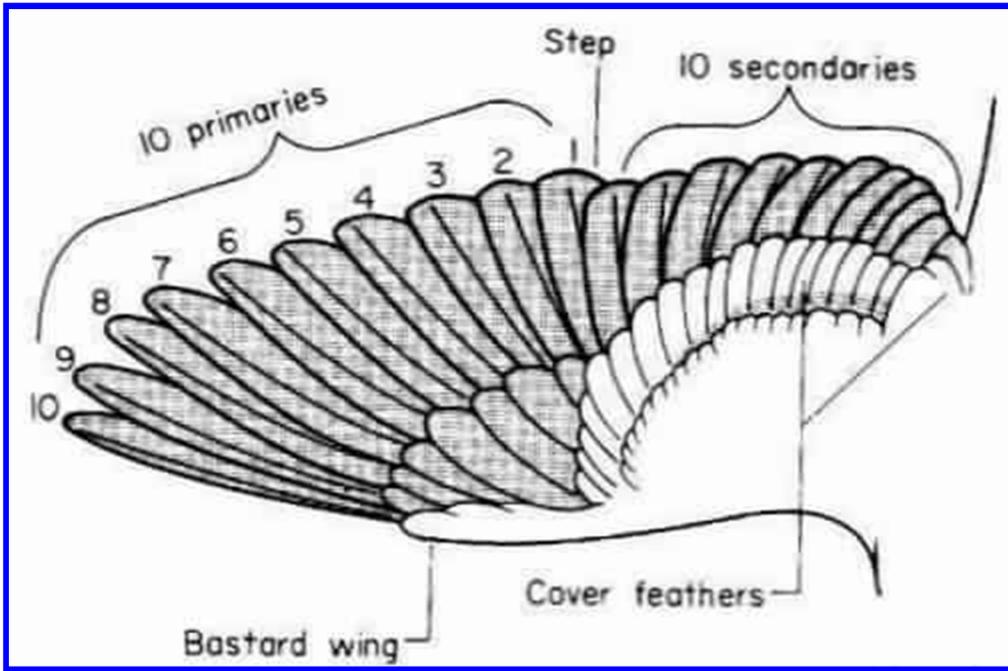
Seminario di Carmagnola (TO)

Museo di Storia Naturale, Cascina Vigna

Moult of the Pallid Swift in the breeding period

Giovanni Boano, Irene Pellegrino, Marco Cucco
g.boano@gmail.com

Feathers' moult in birds



Feather's codes

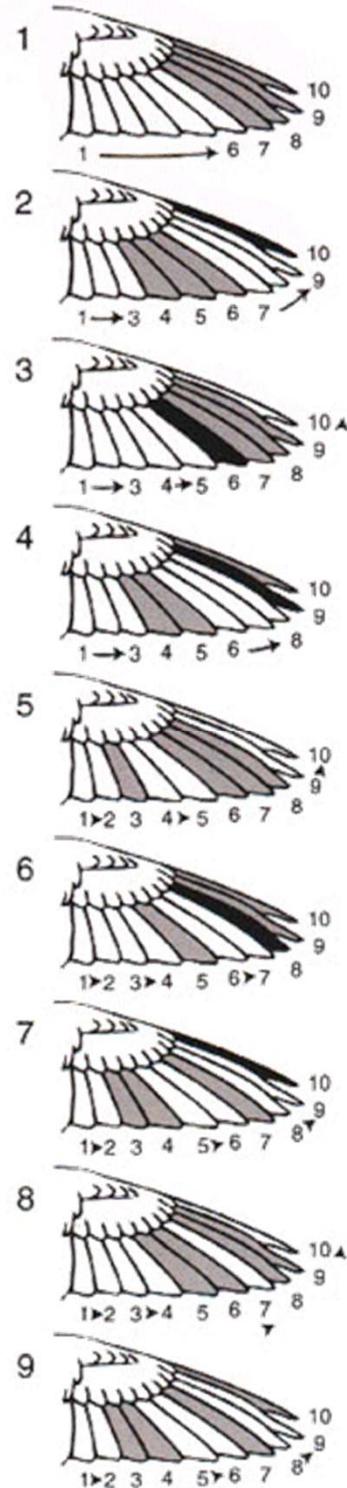
Several moult patterns (an example here)

Stepwise Mould of Primaries

Stepwise primary moult is characterized by multiple waves that begin with proximal feathers and end with distal feathers



Note that moult 9 repeats moult 7



In most bird species, moult does not occur during breeding



However, in some species breeding and moult occur at the same time

Rondine montana (26/7)

In muta

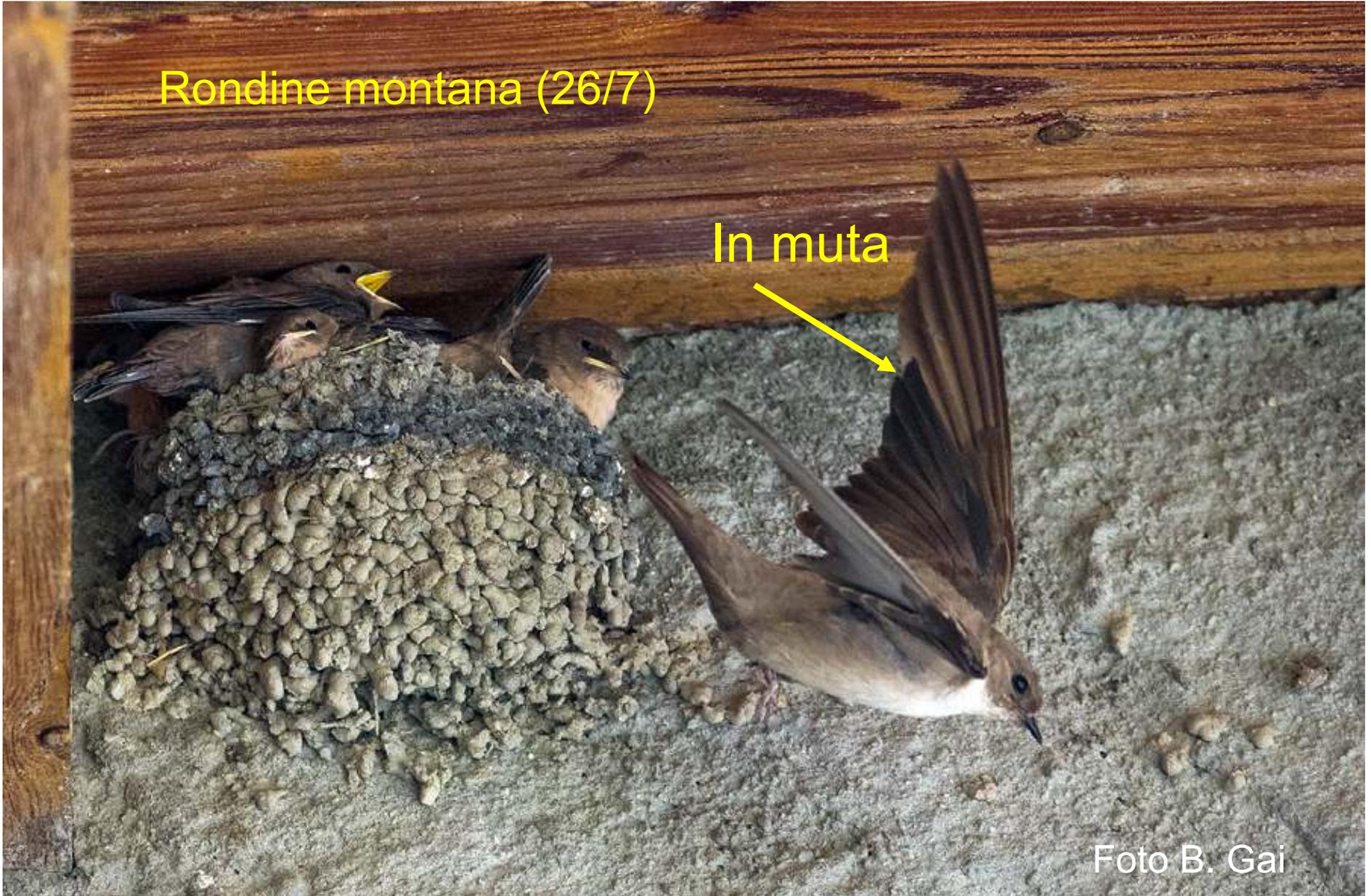
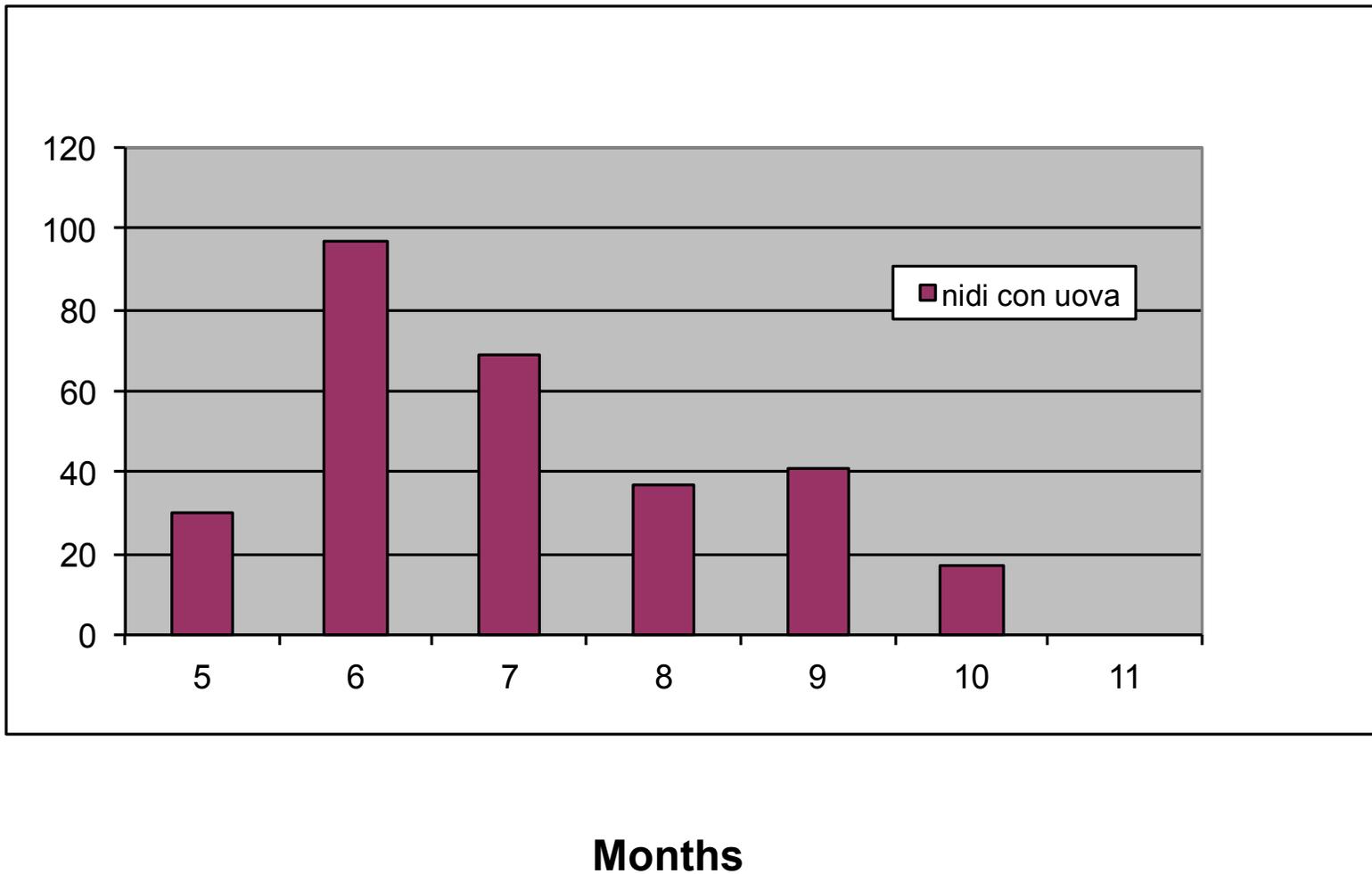


Foto B. Gai

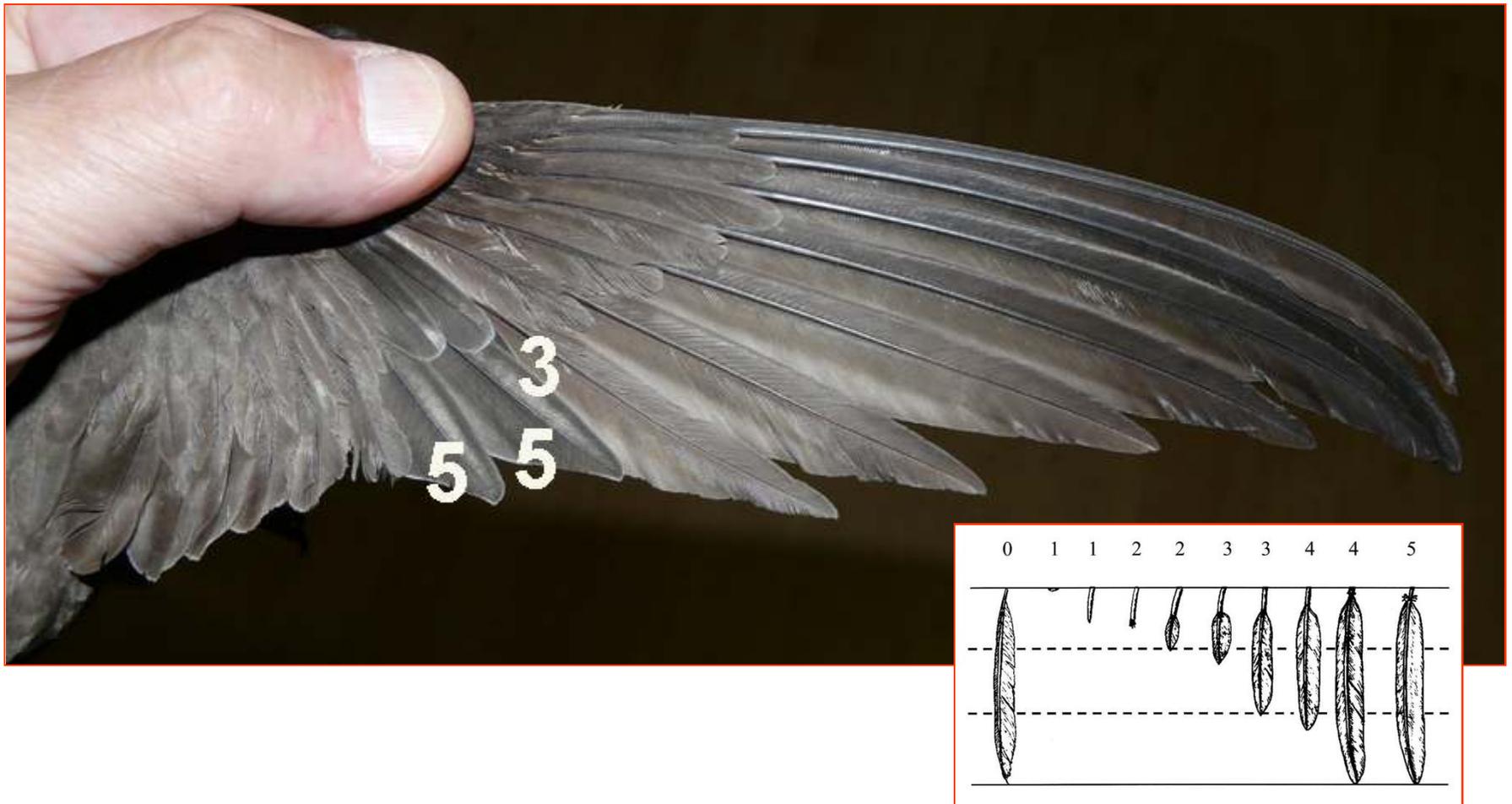
The Pallid Swift has a very long breeding season



Several breeding adults begin their moult
from mid-July

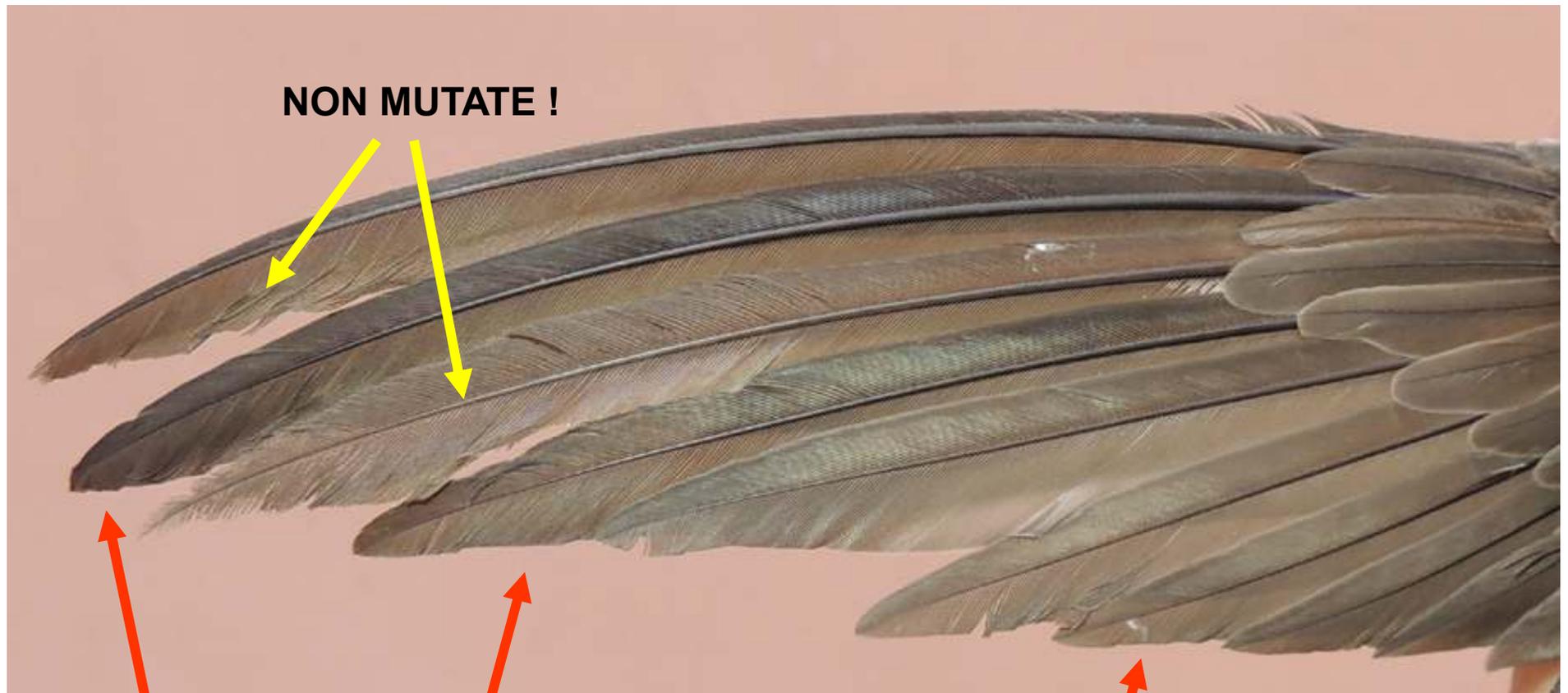


In August, a typical adult wing looks like below



(numbers on the picture are moult scores)

Some individuals retain the 10', or 9' and 10', or the 8' primary.



NON MUTATE !

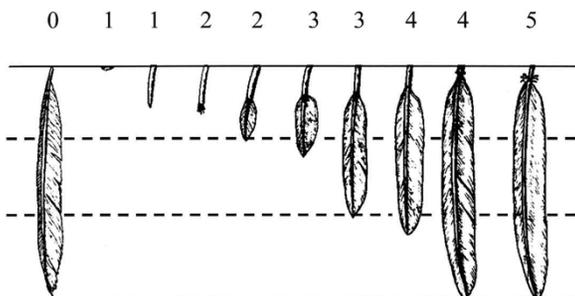
Moulted during autumn-winter

Last moulted feather

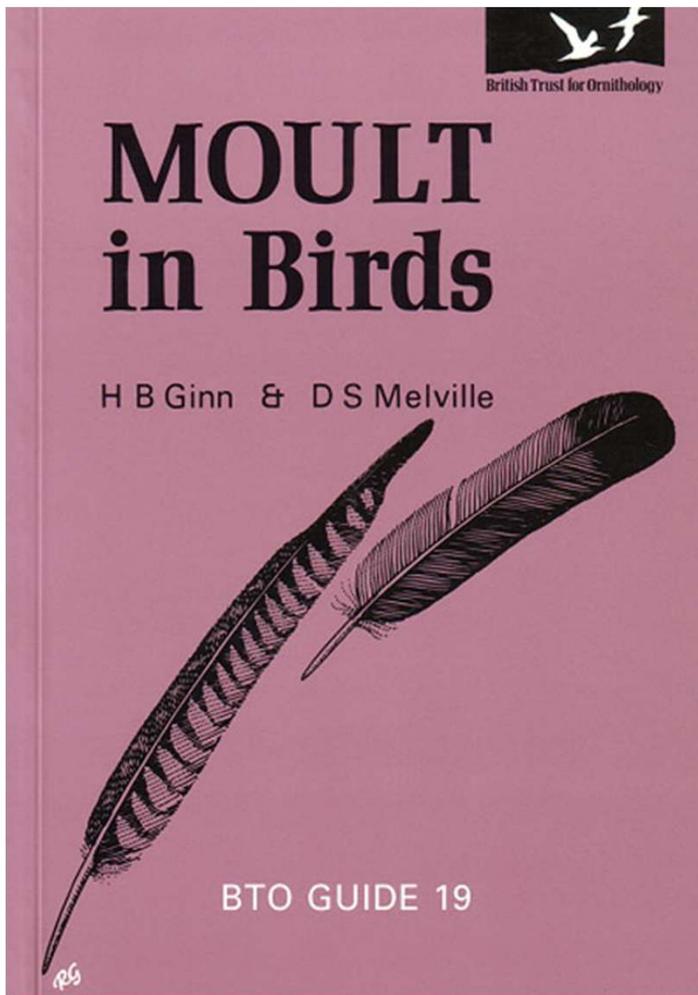
Moulted in the previous summer

Moult scores

Moult score



Score using weight (energy index)



Statistics using software R
Package "r-moult"

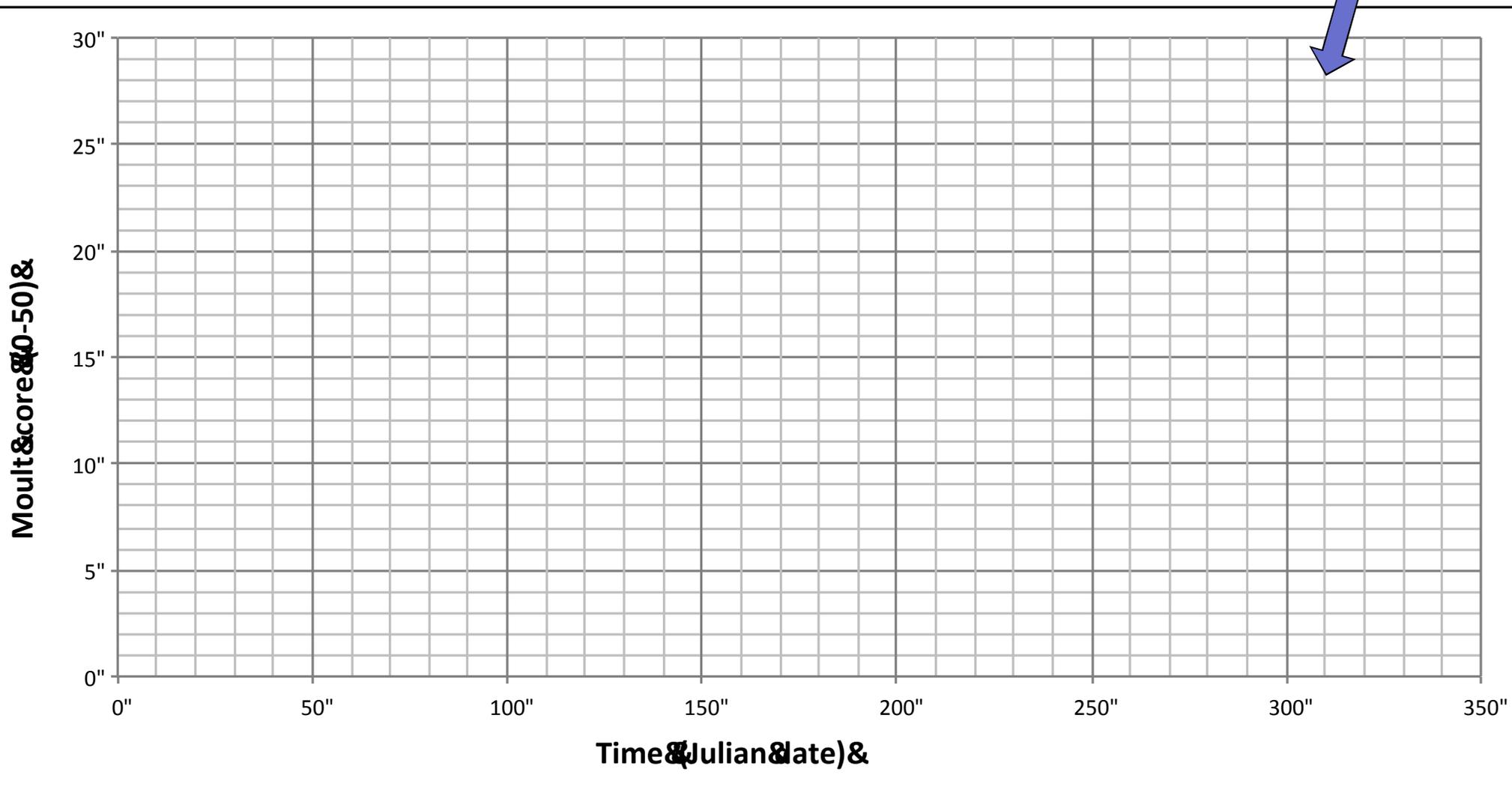
Moult score

We sampled:

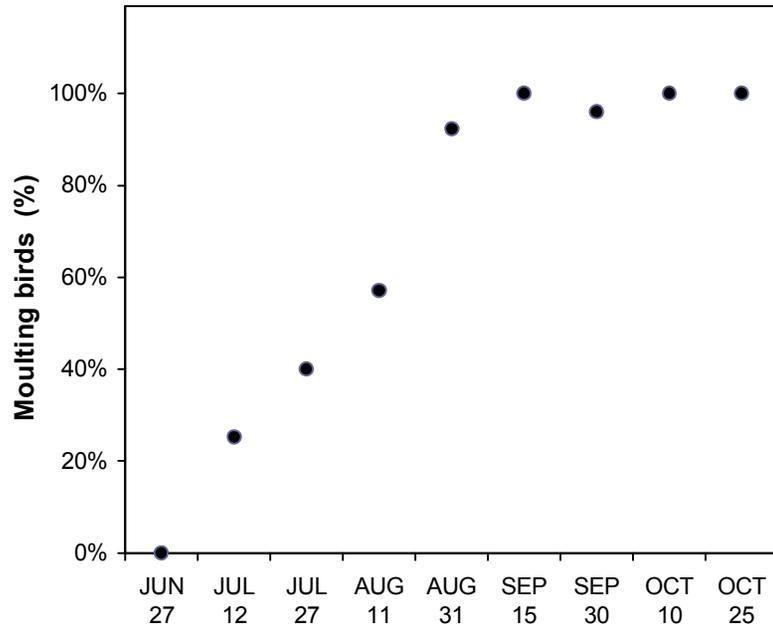
- 255 individuals (1983-2013) in Carmagnola
- 52 individuals (1989 e 1990) in Torino
- 45 individuals (2012-2013) from digital cameras.

Max score = 27

Moult not completed
in North Italy
(score range = 0-50)



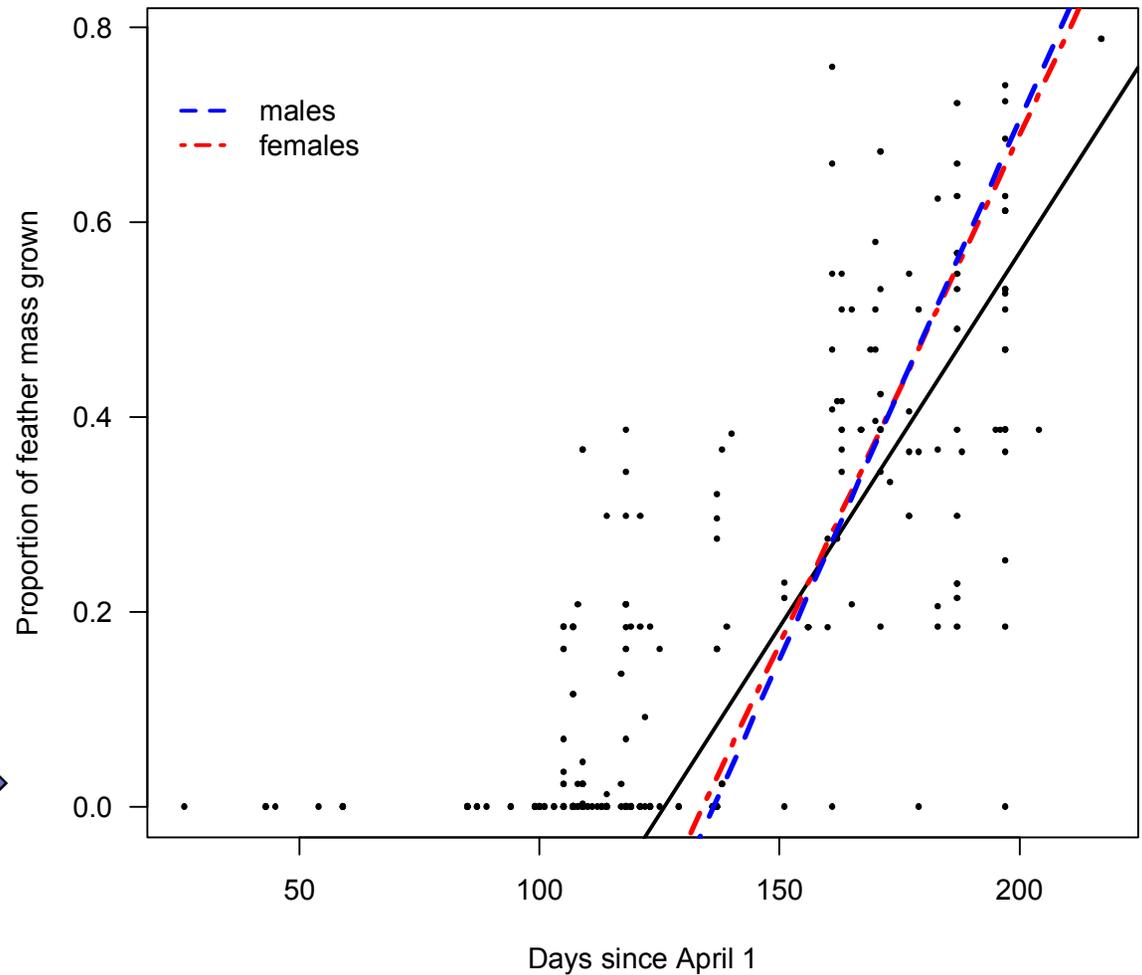
Development of the moult in NW Italy



Percentage of swifts that
START
the feathers' moult (%)

START: males start their moult at the same time of females (9 August: 131.8 ± 6.9 days vs 12 August: 134.1 ± 5.2 days).

DURATION: same duration (90.4 ± 28.2 days vs 95.6 ± 22.8 days).



PENNE NON MUTATE: sequenze molto particolari – animali ricatturati in anni successivi

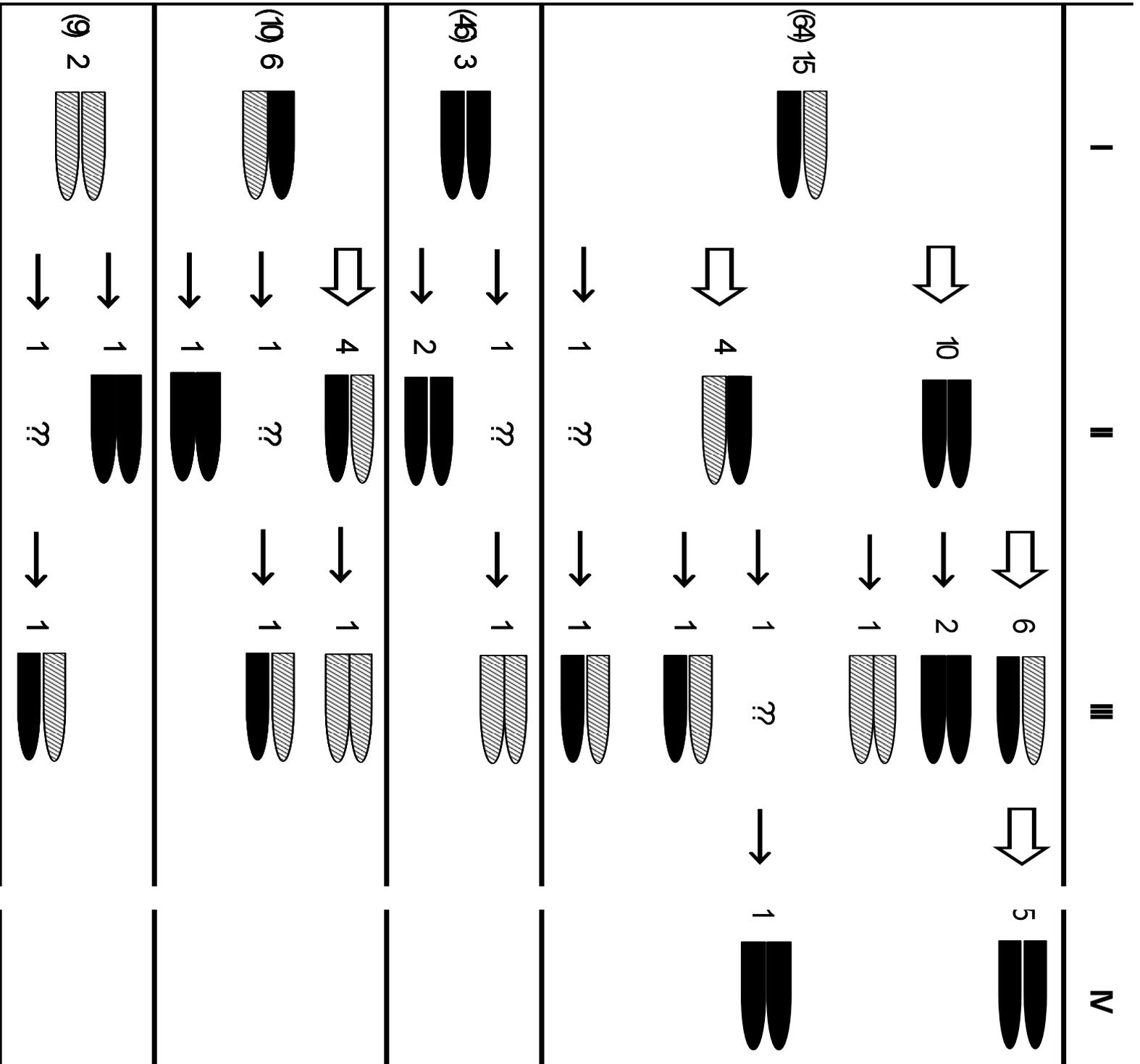


Figure 5

Multi sequences along four years (I to IV) for birds undertaking a complete or a partial moult of p10-p9 primaries. The order of almost primary p10 is shown on the top and p9 on the bottom.

Moult codes: black = replaced, dashed = not replaced, ?? = bird not caught.

Small arrows indicate single individuals, large arrows indicate several individuals with the same moult sequence.

Using high-quality photographs we are able to examine feathers of moulting swifts – no need to capture them !



RP1 e RP2 probabilmente in crescita

We examined several digital photos:
no traces of old worn feathers among (2'cy)
bangers!

