“ Woodpigeons’ (Columba palumbus) autumn migration : a long-term (20 years) and short-term (one year -focus 2017) analytical overview of the detailed peninsular transits in Italy” – OVERVIEW 2018

“ Woodpigeons’ (Columba palumbus) autumn migration : a long-term (20 years) and short-term (one year -focus 2017) analytical overview of the detailed peninsular transits in Italy”

PAPER

OVERVIEW – Collage of Links 2018-IJWR-
The work of Club Italiano del Colombaccio 1997-2018 (Citizen Science) twenty years of Research on the field.
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CLUB ITALIANO del COLOMBACCIO – OVERVIEW by Scientific Papers published 2014-2018 – AUGUST 2018
LINKS are basic of the present Overview-Collage

“ Woodpigeons’ (Columba palumbus) autumn migration : a long-term (20 years) and short-term (one year -focus 2017)

analytical overview of the detailed peninsular transits in Italy”

Please use Translation system on the Journal.- work in progress

Migrazione autunnale del colombaccio (Columba palumbus) : una panoramica analitica a lungo (20 anni) e breve (un anno – focus 2017) termine con dettagli dei transiti peninsulari in Italia.

Migration automnale du pigeon ramier (Columba palumbus): un aperçu analytique long (20 ans) et court (un an – focus 2017) avec des détails sur les transits péninsulaires en Italie

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Key-words : overview,woodpigeon (w.p.),migration,transit,stop-over,Air Pressure (A.P.),flyway,route,corridor,take-off,Appennine mountains,bibliography,web-bibliography
WEB-REFERENCES as by LINKS
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ABSTRACT
The present “ Overview-Collage-Paper “ collects all the Papers (IJWR) concerning the work on the field of more 350 hunters-observers-registrars ,members of Club Italiano del Colombaccio , for more than 20 years.
All the data are concerning many items-topics linked to the phenomenon of the Autumn Migration and following stop.over and wintering of the Columba palumbus in Italy , as an important role involving the Migration over Europe .
The Authors hope that these results can help and develop

better scientific Research in Italy and Europe , at the present time not well considered by the official Institutional Academic Organization about one of the more important Migratory birs' Species.
Publishing the present Overview on the Italian Journal Woodpigeon Research (on-line August 2018) the Authors hope that the presentation could have good "impact-factor" results (Citizen science) directly on the International Research audience by Google motor researcher.
The Authors underline that the LINKS are essential parts of the Text of the present Overview .

Legenda_: le principali rotte (in rosso)dalle aree Europee-Russo-

INTRODUCTION

In Italy the story of woodpigeons' hunting methods is ancient as by the specific overview in the book of Rinaldo Bucchi "Il Colombaccio e le sue cacce in Europa" (Ed.Polistampa-Firenze-2016) . Specific attentions to the law-rules and methods and preservation of habitat and birds including Columba palumbus are very ancient and documented as by the Edit of Pope Leone XII (Papa della Genga) 1826 –Stato Pontificio- (Italian Journal Woodpigeon Research – note August 2018) .
The traditional ancient culture concerning autumn and spring migration of woodpigeons (Columba palumbus) must be considered as basic for the more recent scientific evolution in researches , studies and reports .
Starting from 1996 by a regional project (Romagna-Emilia) and from 1997 by a national "Progetto Colombaccio " of the Club

Italiano del Colombaccio (CIC) as Federative Association of regional groups , methods and collecting data about the autumn migration were developing gradually in better migration's studies and reports ("Progetto Colombaccio" by Rinaldo Bucchi , pamphlets published CIC 1997-2007), until publishing (2018) a monographic book "La Migrazione autunnale del Colombaccio (Columba palumbus) in Italia " (Aracne Edit. Rome 2018) available on-line in "pdf" (http://www.aracneeditrice.it/pdf/9788825511130.pdf) supported by a large exhaustive -on the topic updated 2018- Bibliography-Web-blbliography https://www.ilcolombaccio.it/CMS/wpcontent/uploads/2018/07/Bibliografia.pdf.

The opportunity that we have had to study and analyze many collected data and "recording hand-books" used on the field (co-Authors) , offered so many details to push us Authors developing the present updated (August 2018) OVERVIEW just now in front of the next migratory season 2018 , planned to be monitored by new methods (MSM,MCL experimented in 2017) .
The present paper is according to the "preface" written by P.Busse (Bird Migration Research Foundation – Editor "The Ring" Journal) for the book " LaMigrazione autunnale del Colombaccio (Columba palumbus) in Italia" , in front of " …an astonishingly weak scientific knowledge about this mass phenomenon " and more .."the book is an enormous collection of the data …it contains a wide general background of problems….stimulating to help in serious study programs ".
The "Club Italiano del Colombaccio" (CIC) started by a planned program in 1997 (Progetto Colombaccio by Rinaldo Bucchi – 1997-2007) that will be able to obtain many results and data now as basic elements of an important paper published in 2018 :

THE RING 40 (2018) 10.1515/ring-2018-0001
THE GENERAL PATTERN OF SEASONAL DYNAMICS
OF THE AUTUMN MIGRATION OF THE WOOD PIGEON

(COLUMBA PALUMBUS) IN ITALY
Enrico Cavina, Rinaldo Bucchi and Przemyslao Busse

After 2007 PCI (Progetto Colombaccio Italia) results were published as internal-CIC pamphlets and in 2017 a Poster was presented at the Italian Ornithological Congress in Turin (S.Giannerini- UNIFAUNA) but not available to be elaborated in the up-cited paper . Many of these data were exposed in Cap.XI of the book "La Migrazione autunnale del Colombaccio in Italia " . Last PCI pamphlet (2017) -may 2018 by Ed.Leoni Grafiche-Amelia (TR) –www.leonigrafiche.it

A part the "starting point 1997 " we must underline that many hunters-observers organized themselves – for many years before and after the Second World War – to record the migrations' data on local personal diaries – hand books , and in 1987 a pioner of the PC – computer recording data has been Riccardo Rossi (B.go S.Lorenzo-Mugello area-Tuscany) as by many Excell foils-documents : he collected day by day many items and elaborated his own local data also about averages of woodpigons and flocks observed, woodpigeons observed-shooted-wounded,time transits,identified peaks/waves of the migration,weather conditions and annual changes in local tranit's corridors .Many of the data of Riccardo Rossi are enclosed in the present retroactive research.

MATERIALS and METHODS – RESULTS –

As an homage to the spirit of " citizen science " that guided the scientific evolution of a lot of hunters-observers CIC (more than 350 during the period 1997-2007 Progetto Colombaccio) , we started to better organize the reports focused on the autumn woodpigeons' migration . These reports (listed in Bibliography and Links) are basic materials for the present overview , reporting some of them by partial original version , and some other summarized .
The Italian Journal Woodpigeon Research (http://journal.ilcolombaccio.it/) founded 2018 seemed to the

Authors the right “citizen science” container to publish their results ,according again with P.Busse (preface of “La Migrazione autunnale del Colombaccio in Italia “ 2018) “ ….hopefully the academic researchers will read the book (these reports) as well and they will find there the observations,study cases and suggestions that will be useful to touch these fascinating problems in the serious studies “.
The Journal and present overview could be open windows for better reading the woodpigeons’ migration in Europe .
Selected papers-materials concerning autumn migration of woodpigeons are as by following Links and texts.We strongly suggest to explore these Links depending on the fact that inside them “evidence based” data and results are the true real basic elements of the present long-term and short-term overview .

Long-term overview and papers

BASIC PAPER *****

THE RING 40 (2018) 10.1515/ring-2018-0001
THE GENERAL PATTERN OF SEASONAL DYNAMICS
OF THE AUTUMN MIGRATION OF THE WOOD PIGEON
(COLUMBA PALUMBUS) IN ITALY
Enrico Cavina, Rinaldo Bucchi and Przemyslao Busse
http://www.degruyter.com/view/j/ring
http://www.wbwp-fund.eu/ring/

FIRST PAPER ***

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FULL TEXT , Illustrations,graphics,maps available at
http://www.labeccacciascientifica.it/aggiornamenti.asp
Aggiornamento 08/04/2018 by the Index

“ Woodpigeons’ (Columba palumbus) autumn migration in Central and Northern Italy along two flyways monitored (consecutive 7 years) in eight crucial spots by eight Observers and uniform method “

CAVINA Enrico , BUCCHI Rinaldo – as Authors of retroactive analyses
Benedetti Oliviero , Brunengo Giuseppe,Bruzzone Sergio,Cecchini Renato,Cenni Paolo,Gessi Franco,Rossi Riccardo, Vigolo Denis – as Authors registrars on the field

ABSTRACT
On the base of precedent papers and monography (1-2-3-4-8) by present retroactive research, data recorded (2000-2006) by 8 Observers-registrars in 8 spots sites along two main migration flyways in Italy are analysed to study the volume , timing , behaviours of Woodpigeons (Columba palumbus) migrating in Italy in Autumn . The two routes are one in Central Italy (trans-Appenines mountains) and an other in Northern Italy from the Eastern “way-in” to West Liguria gulf along Padania Valley. A total number of 443.210 woodpigeons and 7.077 flocks were monitored and recorded in 7 years : seasonal peaks and waves of the migration were analysed in details . Many results of the present retroactive research confirm the results and interpretations of precedent papers (1-2-3-4) also concerning the relationships with abiotic factors (meteo) . Some intepretations of particular factors of the migratory phenomenon seem quite new :
– uniform analysis along specific flyways and uniform long time collection of data by uniform methods ;
– seasonal timing and daily timing of the Migration connected with specific latit./longit. sites (way-in,transit,way-out)
– sizes of flocks during the transit (arrivals,transit,departures)
The flexibility of the WP for migration’s choices of the various populations is a dominant character of this migrating species ,also depending on the origins of the populations wich remain -for Italy – a problem to be better investigated (5). Flexibility to organize and performing the autumn migration travel to Italy ,seems the main eco-sensitive character of the Species Columba palumbus .
Further studies will be planned according to the aims of Club

Italiano del Colombaccio and its Members .
FULL TEXT , Illustrations,graphics,maps available at http://www.labeccacciascientifica.it/aggiornamenti.asp
Aggiornamento 08/04/2018 by the Index
CONCLUSION
A lot of documented data has been analyzed in the present retroactive research as reported in the Text,table,Appendix . We tried to develop a linear exposure of the focused analyses .
Some intepretations of particular factors of the migratory phenomenon seem quite new :
– uniform analysis along specific flyways and uniform long time collection of data ;
– seasonal timing and daily timing of the Migration connected with spcific
latit./longit. sites (way-in,transit,way-out)
– sizes of flocks during the transit (arrivals,transit,departures)
Other interpretations about abiotic factors (mostly Air Pressure relationships) remain confirmed (3-4-1).
Flexibility to organize and performing the autumn migration travel to Italy ,seems the main eco-sensitive character of the Species Columba palumbus .
Further studies will be planned according to the aims of Club Italiano del Colombaccio and its Members .

Legenda : le principali rotte (in rosso)dalle aree Europee-Russo-

SECOND PAPER ***
TEXT & ILLUSTRATIONS,MAPS,FIGURES at

Woodpigeons' (Columba palumbus) autumn migration in Italy monitored (consecutive 19 years) in a single crucial spot by single Observer and uniform method. – Preliminary report

CAVINA Enrico (*) , CENNI Paolo
(*) CIC

ABSTRACT
From 1999 to 2017 a single expert Observer (Paolo Cenni) has collected and registered detailed data during the autumn migration of woodpigeons , mostly in October, in a single stable spot located in Central Italy (close to Florence) just in special crossing point for the woodpigeons migrating over the Appenine mountains , arriving from Balkans and Adriatic coasts directed to Tirrenian coasts and West Mediterranea Sea .
The collected data (107.263 birds and 3367 flighting flocks and 48 peaks/waves) offer a special emblematic overview about the pattern of the Species' migration through the Italian Peninsula , showing a full picture of the migration dynamics quite valid for all the area .
Key-words : Migration, peaks & waves (PW),flocks,size,abiotic factors,Air Pressure & weather,wind , woodpigeons (WP)

INTRODUCTION

Deeper studies on seasonal and geographic differentation of intensity of migration and long-term monitoring are relatively scarce . During past and recent years the migrations of woodpigeons (WP) (Columba palumbus) has attracted increasing interest of Researchers considering that WP represent an Avian Species increasing in recent years with ecological implications of Agricolture and Forestry and related biodiversity in breeding/nesting , transit and wintering areas in Europe .
"The general pattern of seasonal dynamics of the autumn migration of the WP in Italy " (Cavina E. and al . -The Ring

2018 -in press) has been recently discussed concluding that ” we need more data from more years and more sites in regions to be able to draw detail picture of the waves and population structure of WP migration ”
On other hand the Literature offers similar Research’s interests, particularly related to “weather-migration ” connections and abiotic factors , as the effect of the atmospheric circulation , variations’timing of Air Pressure ,climatic changes.
A model of study about “weather-migratiom” connections has been reported in 2009 from a single Ornithological Observation Station (Jura mountains – Switzerland) by records of autumn WP migration along 21 years (….) .
MATERIAL and METHODS
Collecting data and documents from the ancient Archives of “Progetto Colombaccio ” – Club Italiano del Colombaccio (1996 – 2018) we have extracted the documents of a very impressive and special experience , that could be emblematic of the WP migration’s dynamics in Italy , on the migration route from Balkans behind the top of the Mountains’ profile Londa is there as by following picture & Map and Observation’s site close to Florence named Londa (Lat.43,51 Long.11,33).

Full view of the migration space to Londa’s observatory site . From the right the corridor from Pass of Muraglione , from the left Mugello’s line . At orizon the Appennine mountains (altitudes around 1000-1100 m.) .

Migration’s Route from Istria to Adriatic coasts : red circle Londa as crossing-point // Routes from Londa to Elba island

The special characteristics of this experience are as following :
– one single Observer , expert in monitoring migration flights ;
– one single observation site located in a unique crucial spot of the historical autumn migration’s Route from Balkans to Western Mediterranean Sea (as Figure above);

– 396 days of observations (full day-light period)in 19 years (30th Sept – 8th Nov.) ;
– unique method of recording data ;
– daily records of weather,winds,hours of transit,size of flocks;
– records of age of the shooted birds ;
– identification of peak (one day) and waves (2-5 days) (PW) of the seasonal migration ;
– related maps and graphics about hourly and daily weather abiotic factors in the origin and transit area ;
– datailed data from 19 years' registration-hand-books (Fig….);
– one single based-experienced syntesis/evaluation of the full migration season;
– developing related analysis with similar records from "Eastern Door of Italy" (Region of Veneto) and from "Exit door" island of Elba (Tuscany Archipelago) .Next step of the present study.

These characteristics seem partially quite similar to the citated 2009 experience in Jura-Switzerland (……) .

RESULTS
A detailed overview of documents and data put evidence of the the following results:
– 386 days of daily monitoring in 19 consecutive years (1999 > 2017) ;
– total WP counted 107.263- Max/y 9.951 (2016) min/y 2.200 (1999)average/y 5642,42 ; increasing percent from 1999 – 353,31 % ;
Total numbers 19 years of woodpigeons observed in a range of 500 m. from the observatory site : increasing 1999-2017 353,31 %

Numbers of woodpigeons Numbers of flocks

– Total flights/flocks counted 3367 – Max/y 246 (2012) min/y 107(1999) average/y 177,21 ; increasing percent from 1999 –

129,90 %;
– total WP/total flocks 353,31/129 ,90 : increased populations at origin with more concentrated WP in relatively increased flocks .
– 48 peaks/waves (PW) identified Min/y 4 , Max/y4 , average/y 2,52
– total WP counted in 48 PW – 65.090 that is 60,66 % of total 107.263 (19 years), min/y 330,max/y 7.670 (wave 7 days), average /y 1354,35

1999 – 2005 2006 -2012
2013 – 2017

– total PW counted in 48 PW 1990 that is 59,10 % of total 3.367 (19 years) ,min/y 14 ,max/y 153 , average 41,45
– theoretical but indicative index of size of flocks is :
– 107.263 WP (19y)/3.367 flocks : 31,85/1 flock
– 65.009 WP (48 PW) / 1.190 flocks : 54,62 / 1 flock
If we consider the Index year-by-year we note a strong difference between ” before/after” 20th October , fewer 30 WP/1 flock in 34,48% before , and more than 30 WP/1 flock in 84,21 % after.
Note : PW (48) happened when Air Pressure corridors were evident all over the Migration Route , without turbolence (Archives Weather History) . Out of PW strong winds had negative influence on the number of flocks observed, indipendent of wind direction. Larger flocks were more frequent in PW or out-PW during final phase of the season ,after 20th October .
Regard chronological evolution of annual PW , we observe :
– in 19 years : 22 PW birds fewer than 1000 – 45,83 %
26 PW birds more than 1000 – 54,16 %
– during first 13 years : birds fewer than 1000 /PW- 38 %
birds more than 1000 /PW- 42 %
– during last 6 years : birds fewer than 1000 /PW – 13 %
birds more than 1000 /PW – 87 %

– Regard local weather conditions -directly registered by the

Observer – during 48 PW we have following data : favourable winds (light or modetate) 31 (65%) and unfavourable (light or moderate) 17 (35%) as confirmed in Weather History Archives;clear sky 65%,clouds or moderate cloudy 35%.
– The detailed analysis of the Air Pressure charts and graphics confronting the PW and Air Pressure changes/jumps confirm our precedent results reported on line www.scienceheresy/Ornithology/ com 2004-2018 . The 48 PW 1999-2017 show parallelism of PW and Air Pressure jump more than 10 hPa in 40 PW (83,33 %) and between 5-10 hPa in 12,5 % and without jumps but on stable A.P with values over 1020 hPa in 4.1 %
– Detailed analysis of the WP age is an other important item extracted from the registering hand-book of the Observer .
* 1999-2017 – during 48 PW tot. 719 WP
young 427 as 59,38 %
adult 292 as 40,61 %
* 1999-2017 – during all the seasons including PW tot. 1273 WP
young 817 as 64,17 %
adult 456 as 35,82 %
* 2006- 2017 (more detailed evaluation) tot. 966 WP
very young (no collar) 274 as 28,36 %
young (poor collar) 331 as 34,26 %
adult (collar) 361 as 38 %
Analysis must be developed in the second planned step of the present research .
The 19 years bag of shooted WP is of 1273 WP that represents 1,18 % of WP observed 107.263.

DISCUSSION

The question is : ” can we consider scientifically significative the contribute (< Citizens’ Science >) of a single Observer , if managed by uniform method and related details , in a single site in crucial Migration Route crossing point > to evaluate the pattern of the dynamics of a long period (19 years) of autumn migration in Italy ?

Registering Hand-books Registering data
Certainly we must exclude the evaluation of the EAST-WEST route running at North in the Valley of Po river until Marittime Alps , Liguria Golf , French coasts and secondary Tuscany coast’s route from Liguria to Populonia and Tuscany Archipelago
The case presented here seems offer many interesting data collected by diligent attention and precision for 19 years . These results seem be confirming many items of discussion published in related paper (The Ring ,2018 in press) .
The recurrent phenomenon of pressing waves of migration realizing PW of sequential flights , appears clearly related to the favourable weather conditions and to the “finger pushing the take-off button” as the jumps of Air Pressure before the departure’s day : the present analysis shows clearly that it is in 83,33 % (more than 10 hPa) and 12,50 % (between 5-10 hPa). The Air Pressure data are checked daily hourly from W.H.Archives of Airports in origin area (Veneto,Emilia,Romagna) .
Three peaks in October 2017

If we control these specific W.H.monthly graphics running over the line of Air Pressure and Wind force and direction , it is surprising that we find coincident migration-A.P jumps by this paradoxical lecture (reversed control) , and we find also that the winds result strong (indipendent by direction) 24 hours before Air Pressure jumps without corrisponding following migration PW .
The present report -that needs a second planned deeping updating research step – is according to precedent results (Cavina E.,Bucchi R. Busse P. – The Ring incoming 2018….) as ” we have five or six groups of pigeons passing Italy in different parts of the autumn and the time of the passage is quite well stable between years . Yearly peaks in different waves , as well the waves themself are not regularly of the same relative volumes , but this is normal that different groups have own number size and migration dynamics ” ,

confirming the flexibility of the sensitive system and migration ecology of WP populations able to perform the journey by best biological and physics choises.
The single experience of a single Observer ,in a single crossing point , seems be evidence-based testimonial (Citizen Science) over the WP autumn migration in Italy , recorded or 19 years .
COMMENT of Prof. Alexander Mischenko , from Academy of Science , Ornithology,Moscow , Russia
The detailed data on the autumn migration of woodpigeons for 396 days of observations (full day-light period)in 19 years (30th Sept – 8th Nov.) are unique indeed. These data allow to see the long-term picture of fluctuations in number of WP individuals and flocks.
After the reading of this interesting paper, a hypothesis has appeared at me, concerning the extremely high numbers of WP migrating in October, 2017. It is known that a part of the Russian WP spend winter in the south of Russia (North Caucasus) and another part – in the South-west Europe (mainly in Italy and Spain).
Several days ago I have spoken with Dr. Peter Tilba, the key Russian scientist spending the counts of WP in the North Caucasus. He told me that the total number of WP in this area is very small in the winter 2017/2018 – the maximal number was ca. 6000 individuals. For comparison: the number of WP in winter 2014/2015 was assessed in 340 000 – 350 000 individuals, in winter 2013/2014 – in 430 000 – 450 000 individuals.
Possibly a larger part of Russian WP population moved to the wintering grounds in the South-west Europe by any unknown reason? But it is only my assumption.

THIRD PAPER **
FULL TEXT, graphics links,tables at
http://www.scienceheresy.com/ornithologyheresy/Cavina2015.pdf
ALL THE GRAPHICS available at
https://plus.google.com/photos/103942035281038458760/albums/60

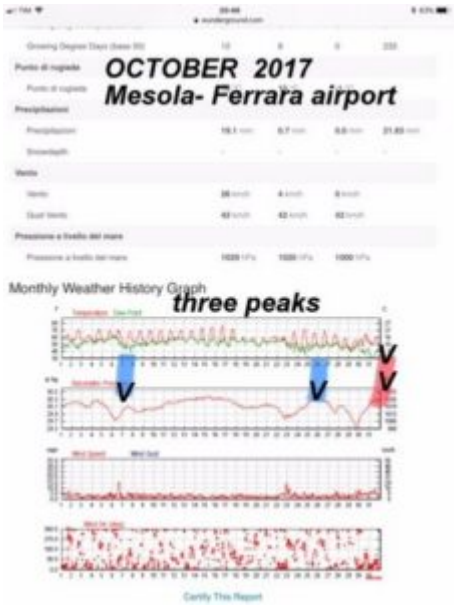
86432829554328737

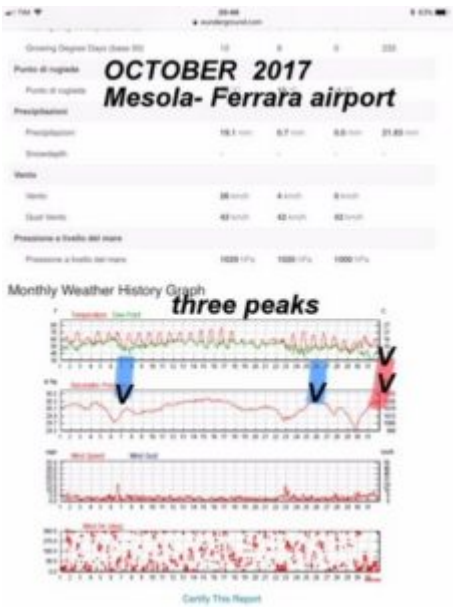
Decision making of autumn migrations of woodpigeons (Columba palumbus) in Europe: analysis of the abiotic factors and atmospheric pressure changes .

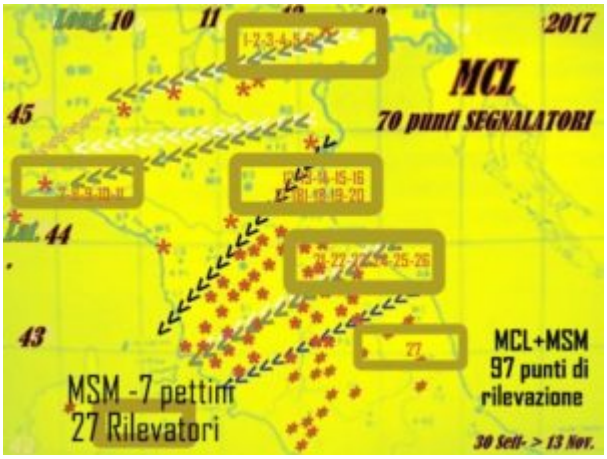
Enrico Cavina
NOVEMBER 2014
ABSTRACT

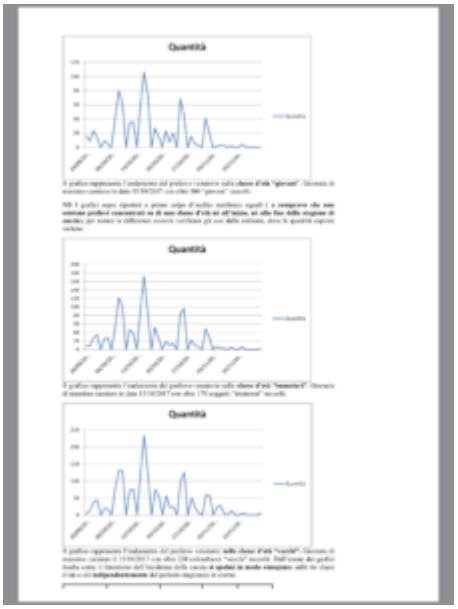
In this detailed paper we have tried to detect all the possible abiotic data on three areas of transit of woodpigeons (Columba palumbus) on autumn migration (Falsterbo Sweden – French Pyrenees – I Appennine mountains and valleys of Iatly), processing and reporting of their data..
Our focus was to identify the main abiotic factor related to the weather that can be defined as the proximate cause or “finger-pressing-the-button” for the take-off flights of the autumn migration from nesting areas near both transit areas. The analysis was conducted on census data in transit, in the Archives ofvarious institutions. The total quantity of birds counted in migration over 40 years (from 1973 to 2014) was 42,936,667. Over the past 15 years (1999-2013) 47 peak days-of-mgration were identified in Sweden, 42 peaks in the Pyrenees and 12 in Italy, i.e. 101 peaks in total. These peaks were compared with the weather conditions recorded day by day and hour by hour and detailed in the Archives of Weather History. The analysis carried out mainly with data rates of incidence of abiotic factors has revealed that the most likely finger-pressing-the-button can be identified as rising of the atmospheric pressure at all three sits (92.62% Sweden, 92.85% in the Pyrenees and 91,00% in Italy). Variations above 10 hPa in 75.80% of the peaks for the sector “36/24 h” and 76.19% for the sector “18 h” preceding the take-off. The global analysis of all the abiotic factors makes it possible to construct a number of hypotheses for the interpretation of the “why” this happens. The sensory input which detects these variations of atmospheric pressure is identified as the Para-Tympanic Organ

of Vitali, a possible “biological” barometer.









INTRODUCTION

Many factors [51] – biological and abiotic factors affect the decision-making moment for many migratory birds to fly migration in autumn and spring. This moment of decision ("decision making") occurs as the first "take-off" from the areas of breeding (autumn) and from wintering areas (spring) and then always occurs along the migratory route until the arrival in the destination area (wintering areas, breeding areas) [3,25,40,44].

The phenomenon of "I decide to go, at this very moment" occurs in different ways for all species of migratory animals, and to interpret it however we have to remember the complexity of the phenomenon of "Migration" (the mystery of migration) in various species of birds.
The "I decide to start now" is active in all migrating birds - migrants day and night, in the short or medium or long distance , migration alone or in group or mass (gregariousness) – who begin or continue after stop-over migration under the stimuli of different biological and abiotic factors[1,2,3,4,30,57,77].

The ornithological literature is rich in studies of all of these various factors [44,51] and related integrations such as physiological, physical, genetic, ecological, ethological, biochemical etc., notably the work of M.S.Bowlin (2010) [51] "Grand Challenges in Migration Biology However, in spite of the wealth of analysis and specific research on abiotic factors, it does not reveal many references and insights useful to identify the time and the precise motive of the "decision making " for the precise moment of take-off, namely the identification of the "finger pressing the button" to start the migratory flight, if it exists as such.

It is obvious that the biological condition (physiological, hormonal, metabolic, physical) [7,13,36] which has been maturing in the days before the migration ("zughunrue")[85],

this is the basis on which the command will act to go . We must always remember that among the abiotic factors, the length of daylight (photo-period) [8,37,40,60,72] is a prominent factor that affects the pineal gland and resulting various neural correlations . It is also obvious that the timing of optimal migration depends on other abiotic factors[2,3,86], just as the environmental conditions and mainly the status of the weather in place or expected. It is imperative – for the birds – to deal with the migratory flight in the best conditions in terms of safety and fatigue, vis-a-vis environmental conditions and the status of the real or expected weather .[12]

But the main question for the focus of our research is this: while considering the balance of decision making of all factors – biotic and abiotic – can we identify a factor that most of the other represents "the finger pressing the button" for the take-off of migratory flight ?. [16-34-35-39-45-48-60-67-71]

The ability of migratory birds to predict the weather is well-known and widely studied [38-44-51] and this also applies to the behviour of resident birds about the behavior (especially alimentary) in the area of residence. It is also known that the extemporaneous weather depend on several factors-atmospheric physical and first of all the atmospheric pressure (AP); as well as the climatic conditions of long period, mostly seasonal, depend on the temporal oscillation so-called "North Atlantic Oscillation" (and corresponding El Nino for the Pacific) characterized by cyclic fluctuation (fluctuation) of the differences of atmospheric pressure at sea level between two vast areas of land-ocean hemisphere: climatic condition acts strongly on biotic factors .[6-31-32-67-82-89] In several scientific papers [38-44-51] aimed at studying the correlation between meteorological factors and migration, Atmospheric Pressure "lows" are almost always given greater prominence, the arrival of which would be perceived by the

migrating birds as a harbinger of bad weather. Not a lot of importance has been given to the study quantitative variations of atmospheric pressure [39-45] that occur just before the arrival of low atmospheric pressure and bad weather.
We should give importance and emphasize the supposed anatomical basis or “biological barometer” which is the Para-Tympanic Organ of Vitali that in addition to barometric functions would also function as altimeter[17-18-20-21-22-23-24-29-80-83]. In previous notes published on the Web [74-79] we had highlighted some important conclusions about the correlations between mass migration and elevations of the atmospheric pressure in the hours before the take-off both for Woodpigeons and for the Woodcock (Scolopax rusticola) [79-74-78].

In this detailed work we have tried to detect all the possible abiotic data (***)on two areas of transit of Woodpigeons (Columba palumbus) on autumn migration (Falsterbo SWEDEN – FRANCE Pyrenees), processing and reporting of them.

The “focus” has been main-for us – to identify, if possible, a set of numerical and statistical data such as to confirm what has already been detected in previous Notice published on the Web (Aggiornamenti 11/11/2013 www.labeccacciascientifica.it) [74-75-77-78]: the atmospheric pressure rises significantly in the 48-18 hour period before take-off migration.

We anticipate as discussed later in the analysis and conclusions: among all the factors affecting the determinism of the take-off for migration, higher-mostly sudden – AP seems to represent “the finger pressing the button”.

OMISSIS ….
http://www.scienceheresy.com/ornithologyheresy/Cavina2015.pdf

CONCLUSIONS –

If you want to compare the data obtained in Sweden (area of first take-off) and France (take-off area after stop) and

Italy (transit area after stop-over) prevails in a substantially similar effect (numerical and statistical) about the abiotic factors that may have influenced the decision of the take –off : no significant differences between the three areas about almost all factors considered (see Tables A and B and C and GRAPHICS)

As for the raising or "overhang" of the atmospheric pressure in the hours (36h / 24 / 18h) prior to the take-off, this increase is still a constant (Sweden 92.62% – 92.85% France) before a true peak migration and quantification of differences can only detect a higher percentage of increase in the hours further away (48-24 h) prior to take-off in France (73.80%) than in Sweden where at this time the remote 'incidence is only 27.65%, while in the two areas in the "18h" before takeoff , the incidence is 78.72% (Sweden) and 76.19% (France). Always interpreted in absolute terms of hypothesis would be the following : raising stimulates the take-off more powerfully and more quickly acclimated birds in a long time in the nest, while the stimulus is more long-term (1-2 days. before) the birds that have long been in migration and stop-over [86] .A regardless of this interpretation and assumptions, it is important to note that the increase is constant over 90% in the peak mass migration. [7-34-61]

The set of data – here in the form of simple raw numbers and percentages not elaborated in strictly statistical, and then ultimately understandable – suggests the desirability and / or the possibility of in-depth analysis designed to identify integrations (day a day / hour a hour) with other abiotic and biological factors (as algorithms, equations, formulas, statistics, mathematical indices of analysis and / or forecast) [32-51-66].
The extension of this method of analysis (ornithology – meteorology) to other areas of nesting and transit (possibly in the spring) may provide additional contributions to the understanding of the phenomenon of migration, deepening the

analysis in climatological terms, so now present seasonal changes in the increasingly looming and influential on the environment. [69]

Verification “live” directly in the field in 2014, about migration in Europe and particularly in Italy – as expressed in the “Updating spatial and temporal Research” – gave full confirmation of the results obtained with the global search retroactive.

Finally, we emphasize that the sensor terminal of the changes in atmospheric pressure
can be easily detected in the organ Para-Tympanic (PTO) Vitali [20-21], which studied for the first time by Vitali in Italy in the early decades of the last century, still the subject of extensive research morphological and functional [19- 24]: if “the finger pressing” can be discerned in the changes of atmospheric pressure (the “overhang”), “click” on which the press is probably the Paratympanic organ of Vitali, having to consider all the neuro-functional integration with the adjacent structures in the inner ear (Lagena, vestibular apparatus) until the centers of the Brain and Cerebellum.
To explain all that we have shown in this retrospective study is essential that there is a definite anatomical basis barometer understood as “organic”. [83-84-87].

Short -term overview and papers

FIRST PAPER ***
http://www.scienceheresy.com/ornithologyheresy/Woodpigeons.pdf
“ MONITORING WOODPIGEONS ‘s (Columba palumbus) 2017 AUTUMN MIGRATION : “DECISION MAKING” of TAKE-OFF and FORECASTING”
CAVINA Enrico (1),BIANCHI Denis(1),FELIGETTI Vasco(1),GIOVANETTI Graziano(1),BUCCHI Rinaldo (2)
1. Club Italiano del Colombaccio –CIC
2. MSM “Monitoraggio Selettivo” 2017 – CIC Copy by the courtesy of the Editor – SCIENCE HERESY / ORNITHOLOGY – 2017
http://www.scienceheresy.com/ornithologyheresy/Woodpigeons.pdf

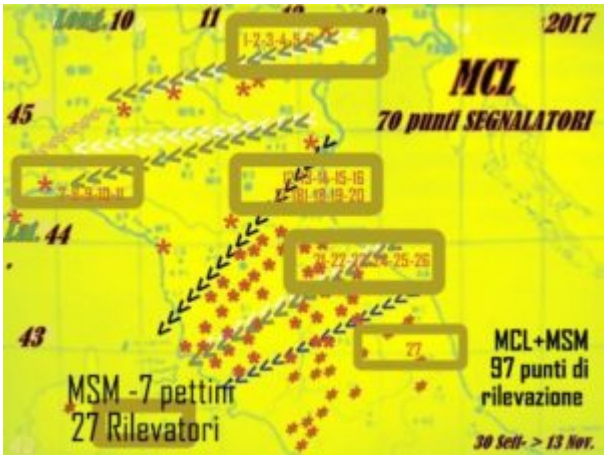
ABSTRACT : By the results of innovative experimental APP (Monitoring Woodpigeons Live – MCL) real time monitoring the arrivals/transits in Italy , the analysis of the migratory picks and special focus on Mesola stop-over take-off put clear evidence of the relationships between the “decision making” to migrate and Air Pressure jumps 12-24 h. before in the area , possibly forecasted. The documented video-film put value on the thesis.
The Authors underline the value of the prediction in Research as a fundamental of the scientific method.
OMISSIS….http://www.scienceheresy.com/ornithologyheresy/Woodpigeons.pdf
DISCUSSION
All the picks in Italy have been forecasted as by ” forecasting bulletin” in the CIC Website one week before .
Most important and impressive documented special event has been the take-off of more than 100.000-200.000 estimated woodpigeons from the Forest La Mesola – Ferrara-close to the Po River Delta (Adriatic sea in front of Istria) at 6,40 a.m. 31st October .

During the days of the week before , some Observers have documented the presence of thousands and thousands of woodpigeons feeding in “Zugunruhe” stop-over around the Mesola’s areas (Fig.4).
On this base and basic Meteo-forecast it was possible predicting (3 days before) the take-off early in the morning of 31st October as after it really happened at 6,40 a.m. (Fig.5 – 6)
One of the Authors (Denis Bianchi) in alert by the forecasting was able to document the take off by a very impressive video recording of continuing 10 minutes take off of thousands and thousands of woodpigeons . Looking the video by Youtube Link is essential part of the present paper.
After the take-off from Mesola the migration has been followed by testimonials (CIC Forum) through Appenini Mountains , Padania valley, until Tirrenian Coast (Populonia Tuscany)

and Liguria Gulf (Genoa) by the direct routes to South Italy , Corsica,North Africa,Baleari islands,France Spain coasts .
The original emotional Video – movie as by Youtube LINK

probably represents unique document about woodpigeons' Take-off in Ornithological History .
We must also underline that similar simultaneous take-off at the dawn of 31 October,happened from other stop-over areas of Italian Adriatic coasts (Pesaro-Monte Conero-other) and probably from Balkanik coast (arrivals in the morning-afternoon 31 Oct.)
Concluding the present instant short preliminary paper-report , we take the liberty to underline the value of the prediction in resarch as fundamental of the scientific method (https://explorable.com/prediction-in-research).
< Our reason allows us to make predictions about the nartural world.Scientists attempt to predict and perhaps control future events based on present and past knowledge . The ability to make accurate predictions hinges on seven steps of Scientific Methods >
(https://www.colby.edu/biology.html)
We tried to stay on this way according to our studies about relationships " Migration-Air Pressure changes – Biological barometer PTO " as by
We try to run on this way despite the silence of the official Ornithology and we strongly adfirm the as by www.scienceheresy/ornithology/index – concept expressed in precedent papers .

and Preliminary Draft
" Monitoring woodpigeons' autumn migration by experimental App. "real time" in Italy : results and analysis 2017 ."



Monitoring migrations routes by new “touch” digital tecnonologies is a new method to “live” record of the movements of migrating birds over large geographic areas .
“Club Italiano del Colombaccio” started MCL (Migration Woodpigeons Live) as an experimental method involving more than 100 registered Observers located over flyways and migration’s corridors crossing Italian peninsula from North East to South West (Adriatic and Tyrrenian coasts) .
Preliminary report has been published 2017 (Italian Journal Woodpigeons Research -short paper on-line) .
The ” MONITORAGGIO COLOMBACCIO LIVE – MCL ” (Monitoring woodpigeon live) has collected (30th September – 10th November 2017) 590.430 migrating woodpigeons by 4272 sightings and average 46 birds/flock ,average flight- height 80-90 m. , mostly not confident (force of the migratory stimulus) .

70 selected registering points of observation during autumn 2017 have evidenced some preferential ways of migration between latitudinal longitudinal corridors.
Analysing in depth the details of the registerd cards of 4272 sightings we have preferred
to choice at present time a focus over two main flyways from North East to South West named
” Central North – CN” and ” Central South – CS ” covering all the Central area of the Italian peninsula crossed by the Woodpigeons (Columba palumbus) from the Adriatic coasts to Tyrrenian coasts flying over Appennine mountains by specific

orographic corridors (rivers,valleys,pass) .

On these two main migration's areas (including various orographic corridors) we have selected more in depth (availability of more details and better continuity of recording) the recorded record-cards for 13 days (one card for two connected days 9-11 Nov.significative delayed november migration wave)) resulting 12 Tables

Selection of days has been preferred depending on the migration-waves able to offer an acceptable key of the "reading" of the Migration ,key
supported by the capacity of the Author to do it on the basis of a very long experience (more than 50 years) on the field.
288 record-cards produced by qualified selected expert Observers have offered many data as following :
• 288 observers with average 24 observers/ one day (12 CN,12 CS):143 CN,145 CS .
• Flocks observed : 1606 (average 133/day) CN,1097 (91/day) TOTAL 2703 in front of Total Italy MCL 3139 (261 /day)
• Woodpigeons (Columba palumbus) counted (elaboration MCL system) :
• CN- 107.200. (8933/day) ,66,79
•
• % of total 160.485 CN+CS (13.373/day)
• CS- 53.285 (4440/day) 33,20
•
• of total 160.485 CN+CS
• Total Italy MCL 192.965 (16080
•
• /day)
• CN+CS transit is 83,16% of Total Italy MCL

• Morning transit happens 80-100 % of total flocks/woodpigeons migrating
• Heights of flying :Low(10-50m) 12-48%(min-max) ,Mean (50-100m) 27-66%,High (more 100m) 8-35% // NB days 35% of flocks we're flying over 100m corresponding with Hiore than

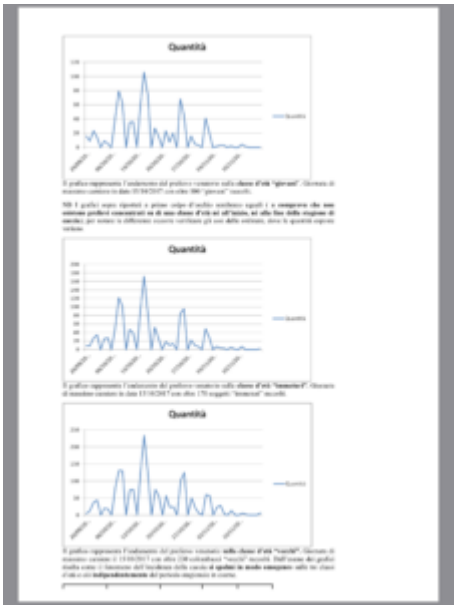
1020 hPa (altitude corridors)
•

• Air Pressure values extracted from the Weather History Archives for main Airports on the East and West costs of CN and CS : the values were 1 less 1015 hPa,8 between 1015-1020 hPa, 39 more than 1020 hPa . It reflect the general AP condition over Europe and Italy in Autumn 2017 : stability AP and no turbulences.
• Wind always moderate-low , prevalent N-NE tail.

SECOND PAPER **

Selective Migration Monitoring (MSM) of Woodpigeons migrated in Italy 2017
Rinaldo BUCCHI – Club Italiano del Colombaccio (preview for “Palombes & Traditions ” French Journal)
Selective Migration Monitoring
as by the LINKS – Index Short Papers –

IJWR – vol. 1 – 2018 PAPERS – Short Comunications



Recently we have had the special opportunity (Club Italiano del Colombaccio)to involve about thirty traditional woodland hunters to produce a survey useful to monitor different

aspects of the wild migrations of the wild. Selective Monitoring Migration is the name of this survey. After identifying the main veins of woodpigeons (WP) passing in Italy, we have created 7 monitoring stations called “combs” for monitoring. These “combs”, in practice, consist of small virtual “barriers” transversal to the migratory lines consisting of a minimum of 3 to a maximum of 6 observers. Among the numerous parameters contained in the survey forms, it was asked to report the age of those killed. The surveyors who offered their willingness to carry out this survey have been provided with precise directives useful, among other things, for the exact determination of the age of the captured subjects. In this case, it was decided to divide the pigeons killed in three age classes. A first class made up of very young subjects (without a white collar), a second class made up of immature subjects (with partial presence of the white collar) and a third class of pigeons formed by old birds (remarkable presence of white collar); moreover, a scheme of the wild wing has been provided through which, possibly, also determine the months of life of the subjects collected during the hunting season.

In the case in point, the figure shows the wing of a wood pigeon with the quilting quill pen and the wing-covering feathers brown-edged: these characteristics set the age of the subject examined in four months of life. That said, it was interesting to see how the traditional hunting of the wood pigeon, exercised with the use of live decoys , had a percentage of the various age classes. The following table shows, in detail, the age of the subjects collected hunting in the various survey combs.

Young pigeons collected
(under 6 months)
Immature
(under the year)
Old
(over the year)
Regions

Veneto 784 190 202 392
Liguria 686 119 265 302
Romagna.Sett. 280 37 78 165
Romagna Centr. 609 195 208 206
Romagna Merid. 882 230 259 333
Marche Conero 420 76 126 218
Abruzzo 137 1 0 136
Total 3788 848 1138 1752
total killed very young young (1 y.) old

Colombacci raccolti Giovani
(sotto ai 6 mesi) Immaturi
(sotto l’anno) Vecchi
(oltre l’anno)

Veneto 784 190 202 392
Liguria 686 119 265 302
Romagna.Sett. 280 37 78 165
Romagna Centr. 609 195 208 206
Romagna Merid. 882 230 259 333
Marche Conero 420 76 126 218
Abruzzo 137 1 0 136

Totali 3788 848 1138 1752
As it turns out, a total of n. 3788 colombacci, of which: n. 848 young people, n. 1138 immature and n. 1752 old. From the sum of the number of young subjects with that of immature (a total of 1986 pigeons) we can verify how the traditional hunting affects mainly the younger populations of the species. Beyond this aspect, it seemed to us interesting to verify the existence of possible concentrations of hunting venues on subjects belonging to different age groups during the hunting season (29 September / 11 November); to find it we made a graph that shows first of all the generalized aspect of “spreading”, over time, the hunting pressure on the three age classes; We subsequently constructed another three graphs referring to the individual age classes of the pigeons killed in the same time frame.

The graph shows the trend of the overall hunting season on the three age groups of the pigeons. Day of maximum stalls on 10/15/2017 with over 500 woodpigeons gathered together by all the surveyors of the autumn pass.
The graph shows the trend of the hunting season on the “young” age group. Maximum game day on 15/10/2017 with over 100 “young people” collected altogether.
The graph shows the trend of the hunting season on the “immature” age group.Maximum game day on 15/10/2017 with over 170 “immature” subjects collected altogether.
The graph shows the trend of the hunting season on the “old” age group.
Day of maximum stalls on 15/10/2017 with over 230 “old” pigeons collected altogether. The line that signals the number of people shot dead repeatedly coincides with the “zero” and this in relation to the days of hunting silence that in Italy correspond to Tuesday and Friday.
If we compare the graphs visually, at first glance, we will find them rather similar, to prove that there are no samples concentrated on a single age class neither at the beginning nor at the end of the hunting season; to notice the differences, check the axes of the ordinates, where the quantities shown vary.
Basically, we have seen how the incidence of hunting is spread over the three age classes in a rather homogeneous way; this finding is a consequence of the verification of the age of the captured subjects who, regardless of the season taken into consideration, they seem to belong to flocks characterized by the presence of young, immature and old pigeons that migrate at the same time.

THIRD PAPER **
“ Wintering is basic for the Spring Migration and future Migration seasons “ .
Réserve naturelle “Bois de la Mesola”: l’hivernage du pigeon ramier. Année 2017/2018.
BIANCHI Denis – Club Italiano del Colombaccio (*)

(*)avec la partecipation au contrôle de l'hivernage
Rinaldo Bucchi, Davide Girometti, Enrico Palli, Francesco Palli, Loris Leoni, Lorenzo Monesi.

ABSTRACT (English)
This study concerns a winter monitoring of the wood pigeon made in Italy by the Italian club of the "CLUB ITALIANO DEL COLOMBACCIO" wood pigeon around the wood of Mesola. This wood is located near the sea on the Adriatic coast. It has been chosen for its strategic geographical position or converges two major migratory lines coming from the countries of north and north-east of Europe. This forest, formed in prevalence by holm oaks, has been declared an integral reserve of the Italian state since the year 1971. The forest, entirely fenced, is at the same time surrounded by an oasis of protection of the wild fauna. The monitoring methods in this study are very detailed as well as the days of the surveys carried out on the most important points of exit of the wood as on certain places where the wood pigeons will feed during the winter. The study ends with a summary with a conclusion where we also find a comparison between the current agricultural situation and the agricultural situation of the 1980s / 1990s. Agricultural situation which determines each year the evolution of the wintering of the woodpigeons on this place.
OMISSIS ….at

Conclusion (French language – use Translator)
À la suite de cette premiére étude sur l'hivernage des pigeons ramiers, nous pouvons dire qu'il y a beaucoup d'années, en 1980/1990, la Forêt de Mesola avait grace aux énormes quantitées de cultures de maïs et de soja une énorme population de pigeons ramiers hivernants (certainement au moins cent mille pigeons hivernants) d'une manière ininterrompue d'octobre à février, tandisque au cours des

dernières années il y a eu une forte augmentation des pigeons ramiers en octobre pour les populations massives présentes pour un escale ou stop.over, mais il y a bien peu de ses pigeons ramiers qui restent et rèussissent à rester tout l'hiver faute la manquance de nourriture.
En faite déjà a décembre cetta année, les 6000 pigeons ramiers observés en Novembre se sont abbaissé de 50% et de nouveau de 30% en janvier à cause d'un nouveau déplacement hivernal à la recherche d'un endroit approprié pour la nuit et pour la nourriture tout en évitant des dépenses excessives d'énergie.
Ce nouveau site trouvé dans la région de Vénétie sur le bord du fleuve Po a été élu à la fois dortoir et zone d'alimentation pour la fin de l'hiver. Ceci est confirmé par Lorenzo dans sa surveillance à la fin de février, détectant une présence d'environ 1200 pigeons ramiers dans les nouvelles zones choisies pour compléter l'hivernage.
Nous pouvons donc confirmer, en fonction du contrôle parallèle réalisée par Lorenzo en province de Rovigo le 26 Janvier et 9 Février 2018,qu'il y a eu en plein hiver un fort déplacement efficace en raison précisément de l'absence de pouvoir trouver nourriture dans les allentours du bois de la Mesola.
Une autre nouvelle que nous pouvons donner c'est la forte capacité d'adaptation qu'il a le pigeon ramier pendant l'hiver se nourrissant meme avec les graines de la citrouille épineuse (Sicyos angulatus L.) végétal importé d'Amérique du Nord il y a environ deux siècles comme plante ornementale laquelle a depuis naturalisé et maintenant se trouve très envahissante avec une expansion considérable
La portance de la tige de la citrouille épineuse permet à l'appareil foliaire de se développer au-dessus de la végétation déjà présente, de la recouvrir et de réduire la transmission de la lumière aux couches sous-jacentes, déterminant dans les cultures des pertes productives importantes.

FOURTH PAPER (work in progress – Italian language)

IJWR – vol.1 – 2018 – DIDACTIC supplement – REVIEW – PAPERS "work in progress"

METEO e MIGRAZIONE degli UCCELLI : corridoi altimetrici isobarici , Colombaccio (Columba palumbus),eventi ed analisi interpretative .

Roberto SCHIAROLI (*) – CAVINA Enrico (2) ……. ……. …….
Club Italiano del Colombaccio

Parole chiave : Meteorologia (Meteo),Pressione Atmosferica (P.A.), isobare , corridoi altimetrici ,involi ,migrazione,organo paratimpanico (PTO)

La migrazione autunnale del Colombaccio (Columba palumbus) in Italia ed in Europa si svolge in prevalenza in Ottobre . La fenomenologia della Migrazione è complessa ed è stata altrimenti trattata da Esperti del Club Italiano del Colombaccio (1997-2018) come da indicazioni in Bibliografia .
Tra i campi di Ricerca insiti nello studio delle Migrazioni è intuitivo il riferimento alle condizioni del tempo e tutti i relativi connessi fattori abiotici , tra i quali oggetto tuttora di studio è la correlazione con le funzioni supposte del c.d. " barometro / altimetro biologico " quale identificato nel 1911 come Organo Paratimpanico (PTO) di

Vitali , Ricercatore e Professore dell'Università di Pisa , che per questa scoperta fu selezionato candidato al Nobel negli anni '30.
Circa la Migrazione del Colombaccio ,numerosi studi analitici – protratti per oltre 20 anni – hanno evidenziato il realizzarsi di "onde migratorie" modicamente variabili per datazione in Autunno , spesso o quasi sempre caratterizzate anche da " PICCHI" migratori concentrati, unici od anche ripetitivi in ogni stagione in Italia ed in Europa ,fortemente condizionati dal Meteo .
L'analisi retroattiva dei "Picchi" mette in evidenza una problematica rilevante in termini di Ricerca scientifica sulle Migrazioni :
< perché –come nel caso del Colombaccio – così tanti (migliaia ed intere popolazioni di individui) decidono di partire tutti insieme dalle sedi di origine o di stop-over , con involi di massa quali si verificano lungo le rotte principali a varie longitudini e latitudini ? >.
Il quesito si pone prepotentemente all'interno di analisi meteorologiche contingenti.
Gli stimoli alla base di tale " decision making " migratorio sono vari e si esplicano in quel complesso sistema sensitivo che comprende lo status biologico dell'uccllo (fotoperiodo sec. Latitudine-longitudine , in primis) e tutta la c.d. " ecologia sensitiva" . Tutti gli stimoli vanno a coordinare la migrazione autunnale – fortemente condizionata dallo status climatologico e meteorologico dell'anno – con alcuni ben definiti scopi :
1. svolgere il volo migratorio in sicurezza e con quanto possibile ridotto consumo delle riserve energetiche ;
2. raggiungere i predestinati luoghi di svernamento nei tempi giusti ed in condizioni corporee e "sociali" idonee allo svernamento stesso ;
3. rispondere pienamente allo stimolo genetico di "salvaguardia della Specie ".
Nello specifico dei "Picchi" migratori tutti i sensi sono coinvolti (ecologia sensitiva) per programmare e decidere il

momento dell'involo , e quando tutto è pronto deve esserci un momento nel quale " un dito virtuale preme il pulsante " .
L'implicazione propriamente meteorologica sembra essere prepotentemente decisiva .
Alcuni studi retroattivi e ricerche anatomo-fisiologiche pertinenti indicano ormai con quasi certezza che il barometro biologico (PTO) è il pulsante sul quale agisce un fattore fisico (il dito che preme) identificabile in uno sbalzo della Pressione Atmosferica (più o meno repentino o diluito 12-24-48 ore) superiore a 10 hPa nel contesto di una situazione meteorologica che tende a stabilizzare l'atmosfera per una vasta area di Alta Pressione .
Emblematico lo sbalzo di 27 hPa nelle 12 ore precedenti l'involo e transito di mezzo milione di Colombacci , oltre a 90.000 oche e 14.000 gru , verificatosi 11 Ottobre 2013 in Svezia .
Molti altri dati similmente documentativi sono stati pubblicati in questi ultimi anni .
Se rilevante è l'elemento " sbalzo della P.A. " , altrettanto deve essere la verosimile condizione meteo-atmosferica che segue tale sbalzo e che sembra confermare per più ore/giorni la giustezza della decisione d'involo , dato che le condizioni di Alta Pressione – specie se realizzano un corridoio tra due aree di Bassa Pressione (vedi schematizzazione di Alerstam) – garantiscono condizioni di stabilità atmosferica in assenza di turbolenze , tutte condizioni che garantiscono risparmio di energie pur in lungo o lunghissimo volo "battente" migratorio .Se le condizioni di vasto corridoio di Alte Pressioni in mezzo ad aree cicloniche , si protraggono per molti giorni e su interi segmenti di Continente (vedi figura ….) , allora può anche verificarsi una massiccia e continuativa migrazione continentale come si è verificato nell'Ottobre 2017 .

Focalizzando l'analisi su "Picchi" migratori –quasi sempre molto localizzati per aree d'involo e transito – dobbiamo possibilmente indagare sia l'estensione di superficie dei corridoi aerei sia l'estensione altimetrica dei medesimi che

di fatto costituiscono delle vie virtuali utili allo svolgimento aerodinamico del volo . Tali condizioni sulla nostra Penisola risentono fortemente dell'orografia in particolare trans-Appenninica .Bisogna inoltre ricordare che altri fattori abiotici incidono in qualche misura – oltre alla significatività di prevalenza statistica (vedi P.A.) – nella fisiologia degli "echi sensoriali" : temperatura,umidità,soleggiamento,visibilità,venti,nuvolosità e precipitazioni , nonché durata della luce del giorno,fasi lunari ,disturbi da antropizzazione del territorio , variazioni dell'elettromagnetismo terrestre .
Molti di questi fattori sono stati considerati in dettaglio statistico crudo in precedente Lavoro " Decision making of autumn migrations of Woodpigeons (Columba palumbus) in Europe : analysis of the abiotic factors and "focus" on Atmospheric Pressure changes " (CavinaE.,2014,on-line http://www.scienceheresy.com/ornithologyheresy/Cavina2015.pdf).
L'argomento " corridoi altimetrici" di percorrenza – dopo involi di massa – si presta a più dettagliata indagine ed analisi , coinvolgente la Meteorologia.

References' Note 2018 : After 2007 PCI (Progetto Colombaccio Italia) results were published as internal-CIC pamphlets and in 2017 a Poster was presented at the Italian Ornithological Congress in Turin (S.Giannerini- UNIFAUNA) but not available to be elaborated in the up-cited paper . Many of these data were exposed in Cap.XI of the book "La Migrazione autunnale del Colombaccio in Italia " . Last PCI pamphlet (2017) -may 2018 by Publish.Ed.Leoni Grafiche-Amelia (TR) –www.leonigrafiche.it .

WORK IN PROGRESS

Draft Concept

HOW DIFFERENCES IN ATMOSPHERE PRESSURE INFLUENCE THE FLYING ALTITUDE OF MIGRATING WOODPIGEONS (COLUMBA PALUMBUS)?

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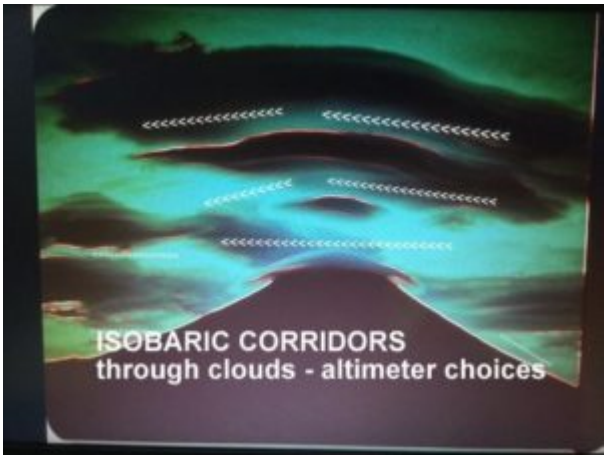

INTRODUCTION

All migratory species, although travelling different migratory ways and directing to different wintering or breeding areas, are facing with the same demands during their travel: how to at least costly, most safety and in shortest time reach the target areas (Kerlinger and Moore, 1989; Alerstam, 1994). Accordingly, the natural selection forced migrants to travel at time of the day and at altitudes that are most favourable to them (Kerlinger and Moore, 1989). The altitudes, over which birds migrate, are greatly variable (Gauthreaux, 1991; Elkins, 2004), depending mostly on the weather processes, like cloudiness, moisture, wind speed and direction (Kerlinger and Moore, 1989; Elkins, 2004). With changing the height of flying, the birds are able to adjust the conditions to themselves (Kemp et. al., 2012). Their sensor for detecting

altitude and barometric pressure is structure in the middle ear: Vitali or paratympanic organ (von Barthler and Giannessi, 2011: Vitali, 1911; Ruffini, 1920; Giannessi et al., 1996; von Barthler and Giannessi, 2011). They are able to sense the changes in pressure too (Metcalfe et al., 2013), and hence, choose appropriate flight level regarding to favourable wind conditions (Cavina, 2016). As birds have a very efficient cardio respiratory system, with effective gas exchanges also at higher levels (Scott, 2011;Butler, 2016), the greater altitudes should be advantageously for them: they can feel less evaporation lossat lower temperatures and fly faster in decreasing air density at higher altitudes (Kerlinger and Moore, 1989). Moreover, it was hypothesised that powered, flapping-flight migrants move as high as available oxygen allows them (Kerlinger and Moore, 1989: Pennycuick, 1969, 1978). Anyway, several studies have shown that migratory birds, when not crossing barriers, prefer lower altitudes despite better wind conditions at higher levels (Gauthreaux, 1991; Kemp et. al., 2012). They fly mostly under 3000 m, the median of the height is 700 m for the nocturnal and 400 m for diurnal migrants (Berthold, 1996). It seems that birds are constantly choosing amongvarious trade-offs to reach optimal condition in certain situation: between flying faster (Kerlinger and Moore, 1989; Elkins, 2004), conserving moisture, reducing risk to be blown off, better navigation, and searching for appropriate habitats (Liechti et al., 2000: Carmi 1992; Kemp et. al., 2012). One such example was provided by Newton (1972): Chaffinches (Fringilla coelebs) were migrating in autumn across the Northern Sea with tail winds at higher altitudes, but when wind blew toward west (headwinds), they were flying along the coast at lower altitudes and crossed into southern England through northern France. In general, the birds fly lower when clouds develop under 2.100 m (Gauthreaux, 1991). However, climbing to higher altitudes is costly (Liechti et al., 2000), especially for larger birds (Hedenström, 2003;Newton, 2004:Hedenstrom and Alerstam 92) and for short distance migrants (Elkins, 2004), like is the Common

Woodpigeon (Columba palumbus). The Woodpigeon is largely northern breeding species (Fennoscandia, northwestern Russia) with predominant wintering areas in Iberian Peninsula, Corsica and France (Cramp, 1985; Cavina and Bucchi, 2007). The more northerly populations usually move beyond residents or southerly migrating populations ("leap-frog" migration) (Hobson et al., 2009). So far, the Woodpigeons were mainly observed along tree major migration routes: Baltic Sea-North Sea Flyway (European northern and eastern populations), Eastern Atlantic Flyway (populations from Fennoscandia and northwestern Russia) and Mediterranean Flyway (birds from the Eastern and Central Europe and Balkan) (Cramp, 1985; Bankovics, 2001; Cavina and Bucchi, 2007; Butkauskas et al., 2013).

The Woodpigeon southwesterly autumn movements start in September and last till early November (Kestenholz, 2009; Cavina, 2015; Cavina et al., 2017;Cavina et al., 2018a). The peak of migration is concentrated in the first decade of October (Gatter and Penski, 1978; Gstader, 2008),or in the second and third week of October (Kestenholz, 2009; Cavinaet al., 2018a), and it is moved into early November in the southern passage areas (Cavina and Bucchi, 2007). The number of migrating birds largely fluctuate between days and years (Kestenholz, 2009;Cavinaet al., 2018a). Larger increases of migrating birds have been observed every 4 to 6 years (Murton and Ridpath, 1962), what could be connected to different physiology and weather, habitat and climate (Gatter and Penski, 1978; Cavinaet al., 2018a). On the other hand, the absence of Woodpigeon in particular years by visual observations could be influenced by observable effects as well. First, the arrivals of the Woodpigeons are limited only to few days (Murton and Ridpath, 1962), though they are stable throughout the years (Cavinaet al., 2018a), and second, to notice the birds which arrive at higher altitudes is difficult, and thus detectable only by radar (Murton and Ridpath, 1962: Lack, 1959).

The Woodpigeons usually fly at lower altitudes, and so enhance the use of landmarks and topographic structures (Elkins, 2004). The flight heights are mostly under 1500 m (Gatter and Penski, 1978), andthe mean flight altitude is between 80 and 90 m (Cavina et al., 2017). In the mornings with clear skies, the Woodpigeons prefer to fly over the mountains, exposed by the sun, and probably thus recover their metabolism after colder nights (Cavina and Bucchi, 2007).They fly higher in tail, easterly winds, and lower when the headwinds are present (Gatter and Penski, 1978). Although, the effects of the weather and climate are recognised as an important factor affecting migratory birds (Alerstam, 1994;Møller et al., 2004; Newton, 2004; Sinelschikova et al., 2007; Newton, 2008; Palm et al., 2017), the detailed analyses of linking weather/climatic factors with other ecological variables on migratory routes are still quite scarce. The valuable data, obtained from standardised Woodpigeon monitoring in Italy, along with environmental conditions (ProgrettoColombaccio, 2017) could provide good insight into the movement patterns of the species in relation to flight altitude and weather factors, namely the air pressure. The Woodpigeon is as a short-distance migrant less under control of endogenous factors and shows more flexible behaviour to environmental changes (Calvert et al., 2012). For example, the increasing frequency of tailwinds have contributed to advance spring migration of the Song Thrush(Turdusphilomelos)(Sinelschikova et al., 2007).

The knowledge on migration patterns of Woodpigeons could contribute to better understanding of bird’s flight performance, influenced by different ecological factors, and at the same time, it is essential for planning management for the Woodpigeon under the future environmental and anthropogenic changes (P. Busse, Preface in:Cavinaet al., 2018b). Here, we are particularly interested, if already little difference of the air pressure can influence the flight altitude at East or West of the Apennine Mountains along the

routes Central-North and Central-South.As the Woodpigeons have very sensitive barometric organ (Cavina et al., 2018b), we expect that already smallerchanges in air pressure would affect their flight altitude as a consequence of taking advantageous in changeable weather conditions.

WORK in PROGRESS
MATERIAL AND METHODS

Study area and the Woodpigeon monitoring in Italy
General and detailed map of monitoring locations
Years, time, observers, protocol…

Weather data (atmospheric pressure)
Data source for air pressure values
To link changing air pressure with associated wind conditions and fronts

Data analyses
After completed data entry and summary statistic

RESULTS

Some presentation of data

Figure 1: Number of migrating groups of Woodpigeon along the Central-North migratory route at different altitudes in relation to the air pressure. (E: east side of the Apennine Mountains; W: west side of the Apennine Mountains)

Figure 2: Number of migrating groups of Woodpigeon along the Central-South migratory route at different altitudes in relation to the air pressure. (E: east side of the Apennine Mountains; W: west side of the Apennine Mountains)

DISCUSSION AND CONCLUSIONS

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Other important scientific Topics , connected with the Migration’s research , have een developed as by the following Links , regarding
– ecology of the migratory senses
– anatomy
– physiology
– abnormal events
– parassitology

Enrico CAVINA
– WOODPIGEON’s ANATOMY – Photographic Atlas – Cavina Enrico m.d. – surgeon – Club Italiano del Colombaccio https://plus.google.com/photos/103942035281038458760/albums/5802521945641185121
– ” The Passenger Pigeon (Ectopistes migratorius) “CAVINA Enrico – Editorial Board Manager – Club Italiano del Colombaccio ” Colombaccio scientifico ” –– Journal’s presentation -Secondary editorial –

By SCIENCE HERESY ORNITHOLOGY
http://www.scienceheresy.com/ornithologyheresy/index.html

Monitoring the 2017 Autumn Migration of the Woodpigeon (Columba palumbus): Take-off Decision making and Forecasting
Enrico Cavina, Denis Bianchi, Vasco Feligetti, Graziano Giovanetti and Rinaldo Bucchi
An innovative experimental app (Monitoring Woodpigeons Live – MCL) performs real time monitoring of the arrivals and transits of woodpigeons in Italy. Analysis of the migratory samples provided via the app with special focus on the Mesola stop-over and take-off provide clear evidence of the relationships between the “decision making” to migrate and atmospheric pressure jumps 12 to 24 hours before in a given area. The take-offs were often successfully forecasted. A

video-film was made which supports this thesis. The authors underline the value of prediction in research as a fundamental aspect of the scientific method.
Posted: 30 November 2017
The Paratympanic Organ of Vitali in migratory birds: Research failure or challenge ?
by E. Cavina
The discovery of the Paratympanic Organ (PTO) in birds by Giovanni Vitali in 1911 was once considered for the Nobel Prize, but the story of the “organ of flight” has almost been forgotten.
Posted: 17 December 2016
Earthquakes, geomagnetism and the reversed sense of direction of woodpigeons (Columba palumbus) during their 2016 October migration in Central Italy.
by E. Cavina
During the recent strong earthquake sequence in Central Italy a “reversed migration” of woodpigeons was observed by members of the Club Italiano del Colombaccio. The phenomenon could be related to new temporary electro-magnetic local sources due to earth fracture movements influencing the migratory senses of the birds.
Posted: 7 November 2016
THE PARA-TYMPANIC ORGAN of VITALI: the challenge of bird sensory physiology.
by E. Cavina
On the basis of the preceding paper concerning the Eurasian Woodpigeon’s autumn migration, we analyzed abiotic factors on the origin Scandinavian-Russian breeding areas for four more bird species in addition to the Woodpigeon. We have selected 60 migratory mass peaks of transit of the Eurasian Siskin, the Chaffinch/Brambling, the Common Starling, the Common Woodpigeon and the Barnacle Goose. The detailed relationship between mass take-off and changes in Atmospheric Pressure (plus other abiotic factors) 48-12 hours before starting has been analyzed .
(A) 6 peaks not significant

(B) 6 peaks moderately significant (7-10 hPa difference)
(C) 48 peaks strongly significant (10-20 hPa difference)
The role of the Para-Tympanic Organ of Vitali is underlined and further investigated.
Posted: 26 January 2016
Decision making of autumn migrations of woodpigeons (Columba palumbus)
by E. Cavina
In this paper we have tried to detect all the possible abiotic effects on the autumn migration of woodpigeons (Columba palumbus). Three transit areas of were considered: Falsterbo Sweden, the French Pyrenees and the Appennine mountains and valleys of Italy. Our focus was to identify the main abiotic factor related to the weather that can be defined as the proximate cause or “finger-pressing-the-button” for the take-off flights of the autumn migration from nesting areas near transit areas. The analysis was conducted on census data in transit, in the archives of various institutions. The total quantity of birds counted in migration over 40 years (from 1973 to 2014) was 42,936,667. Over the past 15 years (1999-2013) 47 peak days-of-migration were identified in Sweden, 42 peaks in the Pyrenees and 12 in Italy, i.e. 101 peaks in total. These peaks were compared with the weather conditions recorded day by day and hour by hour. The analysis revealed that the most likely finger-pressing-the-button is the rising of the atmospheric pressure at all three sites (92.62% Sweden, 92.85% in the Pyrenees and 91,00% in Italy). Variations were above 10 hPa in 75.80% of the peaks for the interval “36/24 h” and 76.19% for the sector “18 h” preceding the take-off. The global analysis of all the abiotic factors makes it possible to construct a number of hypotheses for the interpretation of why this happens. The sensory input which detects these variations of atmospheric pressure is identified as the Para-Tympanic Organ of Vitali, a possible “biological barometer”.
Posted: 14 September 2015

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Following the reading of the main Paper OVERVIEW- Collage
“ Woodpigeons’ (Columba palumbus) autumn migration : a long-term (20 years) and short-term (one year -focus 2017) analytical overview of the detailed peninsular transits in Italy . “

DISCUSSION

Considering the enormous amount of data analyzed in the papers/materials and connected long-period/short-period seasonal observations,it seems that the most important character of the woodpigeons’migratiting populations crossing Italy in Autumn is the flexibility , developing various models of migration,depending on the climatological nesting/breeding conditions,moults,on the origin and stop-over geographic areas and their habitats (agriculture,forests)annual status.
Some evolutional morphologic differences (feathers of the wings) must be considered concerning woodpigeons long-distance and short distance populations .
Flexibility seems one of the main behavior-character properly of Columbides , also for the social life , ethology,and autocontrol of the species and connected survival ability (Murton) . The present and past (as for UK islands) growing up of the woodpigeons transforming themselves from essential long-distance to short-distance/resident birds (also in the cities.gardens,parks) in the wintering area seems confirm this “flexibility” also as evolutional -morphologic character.
The data collected in the present overview confirm these considerations.
Unfortunately the main defect of CIC studies is the absence of certain data concerning the origins of the populations migrating in Italy , through the Mediterranean flyway and connected routes.

CONCLUSION

The “conclusions” of the single papers were reported

integrally as above and Links.

The conclusion of the present overview could be as following.

The populations of woodpigeons migrating in Italy are abundant and growing up during last decade ,arriving mostly by waves/ peaks in October as by the paper

THE RING 40 (2018) 10.1515/ring-2018-0001
THE GENERAL PATTERN OF SEASONAL DYNAMICS
OF THE AUTUMN MIGRATION OF THE WOOD PIGEON
(COLUMBA PALUMBUS) IN ITALY
Enrico Cavina, Rinaldo Bucchi and Przemyslao Busse

http://www.wbwp-fund.eu/ring/

The origins of these populations remain to be investigated (radioisotopic and DNA research expected) possibly by the Hobson and Butkauskas methods.We need economic support to promote these researches .

Legenda_: le principali rotte (in rosso)dalle aree Europee-Russo-

Times of arrivals ,stopping-over and departure ,and also wintering, depend mostly on the agricolture's and forests' seasonal status at the origin and stop-over areas .Every year from the most important stop-over sites (Mesola,Conero,S.Rossore forests) the decision-making of the mass (thousands and thousands) take-off depends always on the jump of Air Pressure (more than 10 hPa) 24-12h before starting from the areas. Moon phases and moult status of birds must be considered.

Main routes/corridors crossing Italy must be considered inside the Mediterranean Flyway that receive migrating populations passed through Morava Door , Carpatian and Balkans areas .The crossing routes of Italy from Eastern Italian Door (Friuli,Venezia Giulia,Istria) are wide arranged on three main lines and directions from North-East and East : first Northern on the continental area at south of Alps Mountains (Padania valley until Marittime Alps and Liguria Gulf) , second Central Northern crossing Appennini Mountains and Mugello-Tuscany from Romagna Adriatic coasts (Mesola,Ravenna) until Tirrenian coast (Populonia,Elba island,Punta Ala ,Argentario) ,the third Central South crossing Central Appennino Mountains from Adriatic coast (Monte S.Bartolo,Monte Conero and more at south) until Tirrenian coast (Lazio ,Campania coasts and also – reverse direction- Argentario ,Tuscany archipelagus) . All these three (North,Central North,Central South) lines are subjected by interchanges of migrating choices of the flocks depending on weather and winds conditions. Southern Adriatic coasts don’t receive large migrations directly from East ,but could be considered a fourth route (South),depending on the population crossing the south of Balkans peninsula(Serbia,Montenegro,Albania,Greece) arriving there by a flyaway along the Black Sea coast : main arrival southern sites in Italy are Gargano (Foresta Nera) and Basilicata region. This must be considered a minor flyway ,not yet well investigated.
A part all the flocks crossing Central Italy from East to West , the main crossing point for transit/departure to West Mediterranean area (Corsica,Sardinia,Spain and North Africa Western Coasts) is at Elba island . Here – by our retroactive long-term research- only 25% of crossing flocks arrive after crossing Central Italy ,and 75% arrive by a route North-South along the Liguria and Tuscany coasts also utilizing the stop-over pine- forest of S.Rossore (Pisa) .
The dominant factor of migrations’ corridors through the peninsular areas depend on the orography : river valleys , forest and protected areas , agricolture in the flatlands and connected “ air pressure – weather- local winds” are important

factors to choice best transit's corridors after arrivals in Italy .CIC is planning research to better understand the various local modalities of the fly and fly-aerodynamics of woodpigeons during the Migration as well the wintering and growing nesting population in Italy.

Details of importance of biotic and abiotic factors were discussed in the single papers/materials : most important character of the species Columba palumbus that emerges also by the present overview , seems to be the "flexibility" as biological behavioral answer – obtained by ecology of the senses and ecology of the migration in front of climatological changes and habitat conditions also during the migratory transit in Italy – to survive as Species.

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