



Yellow spot appearance in bill coloration in adult Gentoo

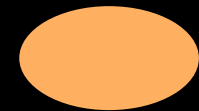
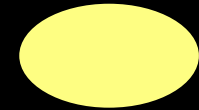
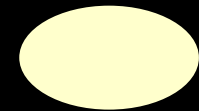
*Supported by grant
INTAS 2001-0517*

Roumiana Metcheva, Pavel Zehtindjiev,
Vladimir Bezrukov, Alex Savov, Elmira Trakijska



Size:
1-2 mm –
20-25 mm

Color:



The “yellow spot” variation

Distribution of the trait between males and females

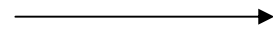
1. Sex determination



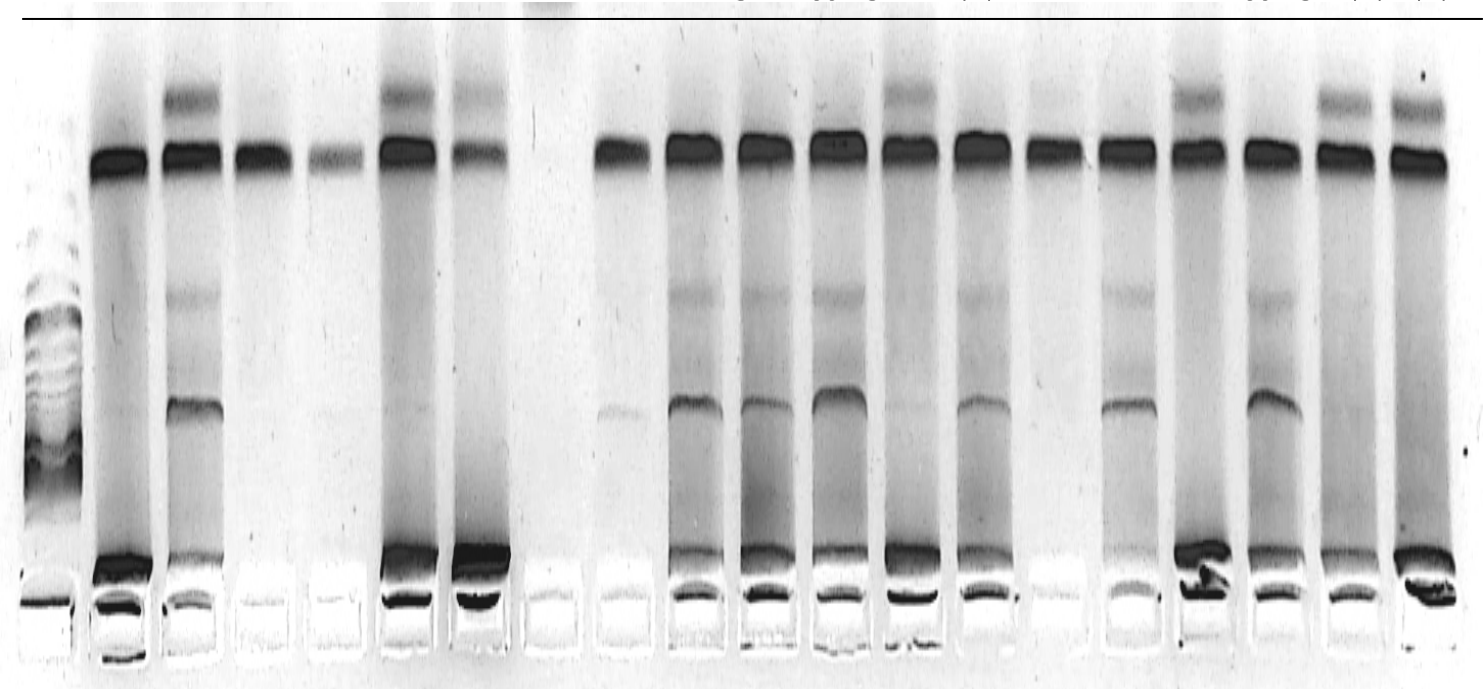
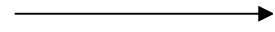
Female ZW

Male WW

190 bp



252 bp



Distribution of the trait between males and females

2. Populations



Female ZW

Male WW


Peterman Island

| Sex | black | yellow spot |
|--------|--------|-------------|
| Female | 85,71% | 14,29% |
| Male | 72,73% | 27,27% |
| Total | 77,36% | 22,64% |

Livingstone Island


| Sex | black | yellow spot |
|--------|--------|-------------|
| Female | 75,68% | 24,32% |
| Male | 73,08% | 26,92% |
| Total | 74,16% | 25,84% |

Frequency of the character

| Phenotype | Petermann | Wiencke | Livingston | All |
|---------------------|--|---------|------------|-----|
| With yellow spot | 44 | 41 | 31 | 116 |
| Without yellow spot | 157 | 73 | 126 | 356 |
| Total |  201 | 114 | 157 | 472 |
| Frequency | 22% | 36% | 20% | 25% |




Statistical significance of differences (exact Fisher's test)

| Populations | One-tailed probability | Two-tailed probability |
|---|-------------------------------|-------------------------------|
| Petermann - Livingstone  | 0,09255 | 0,18510 |
| Petermann - Wiencke | 0,00290 | 0,00581 |
| Livingstone - Wiencke | 0,00137 | 0,00274 |

Dubrova, 2000

Sokal, Rohlf, 1995

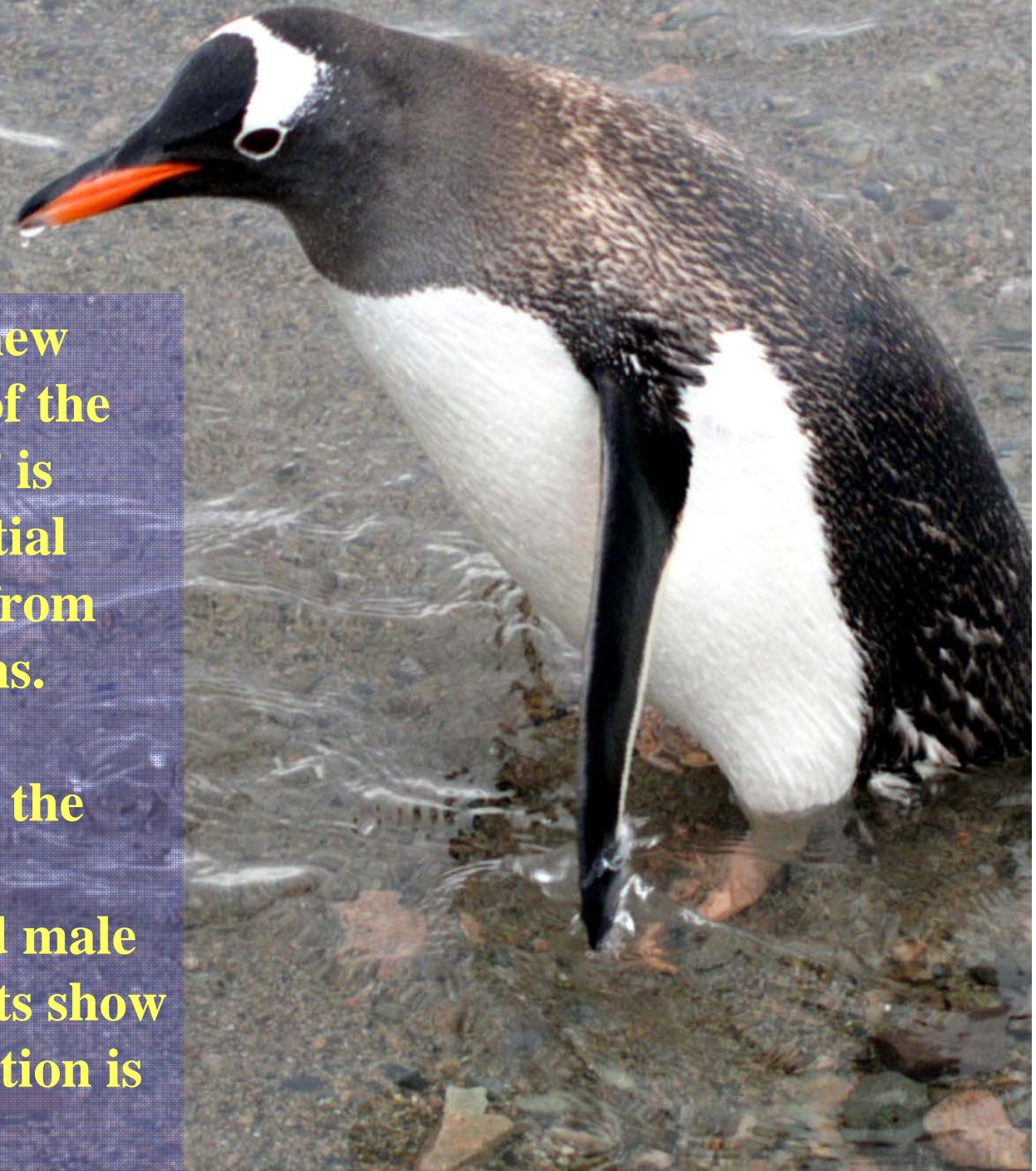
Frequency of the character

| Phenotype | Petermann | Wiencke | Livingston | All |
|---------------------|--|---------|------------|-----|
| With yellow spot | 44 | 41 | 31 | 116 |
| Without yellow spot | 157 | 73 | 126 | 356 |
| Total |  201 | 114 | 157 | 472 |
| Frequency | 22% | 36% | 20% | 25% |



Conclusions

- ❖ The presence of the new described coloration of the bill like “Yellow spot” is recorded in a substantial part in adult Gentoo from the studied populations.
- ❖ The “Yellow spot” of the bill is a characteristic feature for female and male individuals. The results show clearly that the coloration is no sex dependent.



Thank you for attention



Thank INTAS for support