

# **The Foundation Sloughis of the Western Breeding And their impact on today's Western bred Sloughi population**

by Dr. Dominique de Caprona  
© 2006

World Wars I and II brought a tragic end some to 50 years of Sloughi breeding in France, the Netherlands, Belgium and Germany. These bloodlines, which were carefully nurtured, descended predominantly from Sloughis imported from Algeria, the Tripolitania (Tunisia and Western Libya), and a few from Morocco. They are now sadly extinct. Following some occasional breeding in France in the 1950s and the renaissance of the Western breeding of this breed in the early 1970s, the Sloughi population has grown. Some 30-40 years have passed and it seems the time has come to evaluate the impact the foundation dogs and bitches of that period have had on the current Western bred Sloughi population.

A comprehensive data base of the breed was established for this project by Peter van Arkel , totaling 4105 Sloughis, going back to the early 1900's. 1562 Sloughis born between 1993 and 2003 were selected for this study. Lines which have died out have no impact on today's Sloughi breeding. Only dogs were chosen who still have descendants today and their impact on today's Sloughi population was then calculated. A 50% gene contribution was the criterion applied for a dog to be considered a "founder". The dogs and bitches listed below do not always correspond to the dogs which were actually imported from outside of Europe. If, for example, two imports had only one offspring who was born here in the west, only that single offspring is listed, not the two parents. In other words, all dogs listed below are "unique ancestors" to certain lines, whether they are founders imported from countries of origin, or of unknown origins, or single offspring of founder dogs.

The study focuses on determining the impact of 42 founder bitches and 24 founder males. Compared to most breeds of dogs, today's Sloughi gene pool is quite varied. However, as we will see, the impact of each dog and bitch varies tremendously, some have a very little impact, some have a very important impact, some have an impact on the breeding in certain countries only, some on the entire Western breeding.

The statistics of the impact were obtained by calculating the Coefficient of Inbreeding to certain founders on today's population of Western Bred Sloughis. Let me first give a few explanations about DNA. DNA is comprised of genes. Genes are carried in pairs inherited from both parents (except the Y chromosome inherited only from the father), each section of a gene pair is called an allele. The two alleles of a particular gene can be identical (homozygous) or different (heterozygous). Inbreeding increases the homozygosity of gene alleles, this means more alleles are identical. The COI is provided by a computer software which calculates the odds that a particular gene allele inherited from any of the ancestors which occur on both sides of a pedigree has become homozygous by descent. The COI percentage of zero means that no common ancestor occurs in both the pedigrees of the parents. Of course one does not know how homogenous the genetic background of the founder Sloughis is, but this applies to any breed of animal. The COI value is therefore estimated assuming that the founders are not closely related and homozygosity in their offspring is at a minimum or baseline level. It is then just a baseline setting, which can in certain breeds indicate a very low COI. In other more inbred breeds, this is not necessarily the case. Considering the vast geographical distribution of the Sloughi in its countries of origin, it is unlikely that dogs whose parents are not known were closely related. An increase in the COI over subsequent generations of breeding indicates then an increase chance of homozygosity for any gene allele carried by ancestors that are found in the dam and the sire's pedigrees. It means that with an increase in inbreeding there is an increase in the sameness of the alleles of the genes. Breeders today can calculate the COI of their own planned breeding using various computer softwares. However no one has looked at this aspect across the entire breed. This is what we have set out to do here.

The first table gives the listing of all the animals, bitches and dogs, whose impact was measured on today's western-bred population of Sloughis. The table also indicates the African country of origin when it is known, or the country in which the dog lived or was imported from when it is different from a North African country.

<b>Bitches (42)</b>	<b>Dogs (24)</b>
L' Missou (unknown/France) 1962	Khalife (Algeria) 1961
Nedjma (Unknown/France) 1964	Morjane (Tunisia) 1963
Richa Talata (Algeria) 1964	Amen Ouled Nails (Morocco) 1966
Nacha (France) 1964	Shidi Mechra-Bel-Ksiri (Morocco) 1965
Operette (Algeria) 1965	O'Dalgo (unknown)1965
Suleika Mechra-Bel-Ksiri (Morocco) 1965	Othello (Algeria) 1965
Luuk (unknown/Holland) 1966	Quitus (Algeria) 1967
P'Bronzette (Tunisia/Algeria/AFR) 1966	Ramsa (unknown) 1968
Nymphe (unknown/France) 1967	Shab Ben Alojazaer (Algeria) 1968
Souad (unknown/France) 1967	Sloughi Ben (Tunisia) 1971
Tania (unknown/France) 1968	Vero del Ksiri (Morocco) 1972
Muna (unknown/Spain) 1968	Vick D'Ouled Dlim (Morocco) 1972
Hourriah (Morocco) 1969	Jenna (Middle East?) 1974
Saida 2 (Morocco) 1969	Boustan (Tunisia) 1975
Damiela (Libya) 1969	Roustan (Tunisia) 1975
T'Soraya (unknown/France) 1970	Srab II (Tunisia) 1975
Talit (Tunisia) 1970	Masoud (Tunisia) 1975
Abla (Tunisia) 1971	Laba'An II Al-Khalij (Saluki/Saudi Arabia) 1977
Vouka Grimoires de Kerfa (Morocco) 1972	Jnah Ouled Salem (Morocco)1984
V'Diba Ghazala (unknown/France) 1972	Rais (Morocco) 1985
Violaine (unknown/France) 1972	H'Mami (Algeria) 1989
Viana Grimoires de Kerfa (Morocco) 1972	Stak (Algeria) 1989
Vassya d'Ouled Dlim (Morocco) 1972	G'zal Ouled Laouichat (Morocco) 1991
Mascha (Tunisia) 1974	Dukal U. bershebas el Abid (Libya) 1999
Xoutes des Oudaia (Morocco) 1974	
X'kisba d. Amethystes Tichka (Morocco) 1974	
L'Karla Diane (Afghanistan) 1975	
Miska (Tunisia) 1975	
Lysis (unknown/France) 1975	
Mejda (unknown/France) 1976	
Zina de Guercif (Morocco) 1984	
Kali (Azawakh) 1984	
Jdiah (Morocco) 1985	
Richa el Djerid (Tunisia) 1986	
Richa (Algeria) 1986	
Jdiah2 (Morocco) 1987	
Jdiah Ouled Salem (Morocco) 1987	
L'Hazal Ouled Salem (Morocco) 1987	
Diana Jdiah (Morocco) 1987	
D'Selma (unknown/France) 1988	
Nawwal d. Ouled Roualem (Morocco)1990	
Q'Rouicha-Ighoud (unknown/France) 1992	

Note: Masoud & Mascha are siblings, and so are Vassya & Vick D'Ouled Dlim

One remark before we look at the results: the numbers presented here are only coefficients of inbreeding on the various foundation dogs and bitches. Of course more Sloughis have these founders in their pedigrees without necessarily being inbred to them, for example if these founders are only found once in one side of their pedigrees.

## THE BITCHES

We take a closer look first at the bitches and their impact on the breeding in France, Germany, the Netherlands, the United States of America, and Europe ( which includes all European countries not listed separately), and group them all together in the Total. The numbers indicate percentages. In bold are the six bitches with the highest impact in each country, in bold red the two bitches with the highest impact. Next to each country we indicate the number of dogs bred there from 1993 to 2003 which are involved in this study.

Let us see now what these numbers tell us in these countries.

Bitches (42)	Germany 468	Holland 56	France 486	USA 205	Europe 403	Total 1562
L'Missou 1962	0.671595386	2.092633929	2.700567049	0.068121189	2.095595897	1.591083365
Nedjma 1964	0.17966246	0.837053571	0.312560282	0.01714939	1.339290041	0.498870576
Richa Talata 1964	0	0	0	0	<b>3.203330975</b>	0.826467595
Nacha 1964	0.714476496	1.116071429	<b>4.93746785</b>	0.07336128	2.131232553	2.309801637
Operette 1965	<b>3.208988548</b>	<b>5.120849609</b>	2.63757274	<b>4.724954745</b>	<b>5.072218372</b>	<b>3.71087498</b>
Suleika Mechra-Bel-Ksiri 1965	<b>3.64442483</b>	2.45186942	1.242002636	1.291087081	<b>3.410032665</b>	<b>2.527605709</b>
Luuk 1966	<b>12.64194586</b>	<b>8.150809152</b>	<b>4.236191487</b>	<b>9.960342035</b>	<b>6.987571243</b>	<b>8.215800931</b>
P'Bronzette 1966	0.878123748	0.810895647	1.476297261	<b>4.149437881</b>	1.284918773	1.598527154
Nymphe 1967	0	0	0.027327675	0	0.011631514	0.011503681
Souad 1967	0.502679287	0	2.736987204	<b>3.704268293</b>	1.047320875	1.75856274
Tania 1968	0.653128339	0.122070313	0.848162616	0.12076029	0.234932343	0.536046535
Muna 1968	<b>6.942462106</b>	3.787667411	1.2578768	2.559308308	<b>2.9448327</b>	<b>3.567110225</b>
Hourriah 1969	0	0	0.05465535	0	0.023263027	0.023007362
Saida 2 1969	0.326564169	0.061035156	0.39233298	0.060380145	0.117466172	0.258145106
Damiela 1969	1.878839476	<b>8.823939732</b>	0.020897634	0.163871951	<b>6.566958747</b>	2.285231274
T'Soraya 1970	0.539196047	2.232142857	0.607638889	0.045731707	0.850554435	0.576059339
Talit 1970	0.15357906	0	0.253986626	0	0.034894541	0.134042894
Abla 1971	1.516175881	<b>4.457310268</b>	0.282921811	0.314405488	1.184233483	0.889097011
V'Diba Ghazala 1972	0	0	0.591563786	0	0.292726427	0.259583067
Violaine 1972	0.628714276	0.299944196	0.448897248	0.853658537	0.468168424	0.560866977
Viana des Grimoires de Kerfa 1972	1.1885683760	0	<b>6.225083591</b>	<b>10.16291921</b>	2.256029001	<b>4.208846831</b>
Vouka des Grimoires de Kerfa	0	0	0.1093107	0	0.046526055	0.046014725
Vassya d'Ouled Dlim 1972	0.776241987	2.971540179	0.005626286	0.047637195	0.58969351	0.39271942
Mascha 1974	<b>8.390090812</b>	3.4179688	1.50623714	2.710556402	2.925325682	<b>4.092934739</b>
Xoutes des Oudaia	<b>2.121728098</b>	<b>6.73828125</b>	0.011252572	0.09527439	1.289886399	0.984502541
X'kisba d. Amethystes Tichka 1974	0	0	0.051440329	0	0	0.016005122
L'Karla Diane 1975	0.889756944	0	<b>4.478523663</b>	0.100990854	1.191260856	1.980633803
Miska 1975	0.225360577	0	0	0.983231707	0	0.1965629
Lysis 1975	0	0	0.102880658	0	0	0.032010243
Mejda 1976	0	0	0.051440329	0	0	0.016005122
Zina de Guercif 1984	0.387286325	0	0	0	0	0.116037132
Kali 1984 girl	0	0	0.16718107	0	1.457816377	0.428137004
Jdiah 1985 girl	0.465745192	0.669642857	0.768389918	0	0.538926799	0.517665653
Richa el Djerid 1986	0.898103632	<b>4.464285714</b>	0.302211934	0.091463415	1.4413384	0.746989036
Richa 1986	0	0	0	<b>9.451219512</b>	0.31792804	1.322423175
Diana Jdiah 1987	0.106837607	0	1.260288066	0	0	0.424135723
Jdiah2 1987	0	0.892857143	1.388888889	0	0.504032258	0.562179898
Jdiah Ouled Salem 1987	0.931490385	0.446428571	0.147890947	0	0.57382134	0.473151408
L'Hazal Ouled Salem 1987	0.931490385	0.446428571	0.147890947	0	0.57382134	0.473151408
D'Selma 1988	0.186965812	0	<b>6.58436214</b>	0	0	2.104673496
Nawwal d. Ouled Roualem	0	0	0.077160494	0	0.279156328	0.09603073
Q'Rouicha-Ighoud 1992	0	0	<b>3.806584362</b>	0	0	1.184379001

### Germany (29 founder females)

First a general remark: whether we look at Germany alone or worldwide, the numbers are distorted by the large number of dogs produced by the Schuru esch Schams kennel. This is always the case when a specific breeder produces many more dogs than others. The foundation dogs of such a prolific kennel, because of the large number of their descendants, end up having a much larger impact on the entire Sloughi breeding in the Western World, as well as countries of origin to which some of these dogs were exported.

It comes as no surprise that the bitch with by far the largest impact on today's German Sloughi population is Luuk. Luuk, dam of Ifrita al Schams, was a rescue from gypsies in the Netherlands, estimated by the Dutch judge Han Juengeling to be a Sloughi, but for whom a North African origin is not documented. The impact factor of this bitch is highest not only in Germany but also in the western breeding as a whole.



Luuk

The second most important bitch in Germany is Masha, imported from Tunisia. She is also a foundation bitch of the Schuru-esch Schams kennel. Although she truly is an African Sloughia, her impact is 2/3 that of Luuk in Germany, half that of Luuk in the Western breeding as a whole.



Mascha

The third most influential bitch in Germany is Muna, a bitch imported from Spain, first registered in the 1970s in the VDH Sammelregister as Galgo espanol Dona del Canto imported from Spain, then registered in the German Register as Sloughi SL 1, origins unknown. A North African origin of this bitch has been questioned. The importance of this bitch is mostly in the Schuru esch Schams kennel, but it is seen also, albeit in a less influential manner, in other countries.



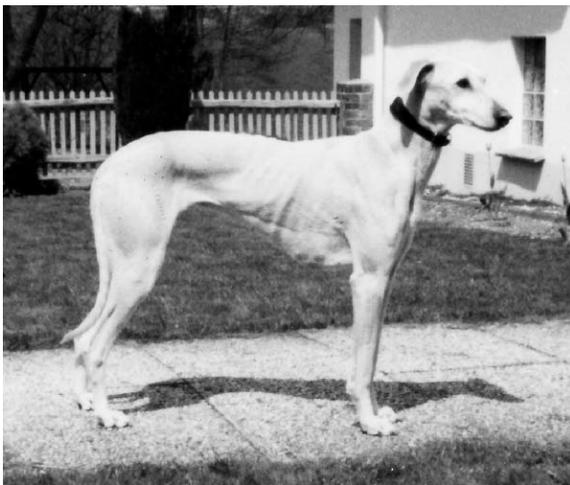
Muna with pups

The German Sloughi Population is highly influenced by the three bitches Luuk, Masha and Muna. When adding their impact numbers, we find 27.9743 %, an impact factor too high for a good genetic health in any population.

Other kennels in Germany, although they have bred smaller numbers, contributed with bloodlines descending from North African bitches, thus enabling the existence of a larger gene pool in this country and bloodlines which go back to other female lines.

The bitches Suleika Mechra-Bel-Ksiri, Operette and Xoute des Oudaia are the next most influential bitches in this country. All three came from North African countries of origin (Morocco and Algeria). Their combined impact is 8.9750%, approximately the same as Mascha alone. All other bitches which still have descendants in Germany, have each an impact of less than 2% on the current German Sloughi population.

To conclude, the impact on the German Sloughi population of Luuk and Muna combined is 19.5843%. The impact of the North African bitches Suleika Mechra-Bel-Ksiri, Mascha, Operette and Xoute des Oudaia combined is 17.3650%. One wishes it were the other way round, and that Luuk and Muna because of their uncertain origins had a much smaller impact.



Xoute des Oudaia



Suleika Mechra-Bel-Ksiri

### France (39 founder females)

The first impression one gets when looking at the French breeding is that of a pretty well balanced use of the various female founders- in fact the French breeding is based on the largest number of founder females of all Western countries in the study. No kennel dominates the scene, and as a result no bitch in France reaches the high level of impact seen for the 3 bitches in Germany. None has an impact factor higher than 7%



D'Selma

The bitch with the highest impact is D'Selma, foundation bitch of the lines found in the de Germigny et the de Slouaz kennels. Little could be found about the precise origin of this bitch. She was registered directly in the Livre des Origines francaises. (LOF)

The second most influential bitch is Viana des Grimoires de Kerfa from Morocco. She is a foundation bitch of the lines of the Kahloul de la Treille kennel. She was the dam of its very influential stud Abd des Grimoires de Kerfa, whose sire was Vick D'Ouled Dlim. The Kahloul de la Treille kennel ended tragically, but was for many years an important kennel in France, and descendants of these dogs are still being born.



Abd des Grimoires de Kerfa  
(Vick d'Ouled Dlim x Viana des Grimoires de Kerfa)

The third most influential bitch is Nacha (by Sten out of Kalinka Kerba). Sten is said to have been from Boghari in southern Algeria, and Kalinka Kerba was by Fels de la Meharigue out of Gazelle. Kalinka Kerba was registered in the Livre des Origines Algeriennes and was bred by X. Przezdziecki at the time when he was still in Algeria.



Une Belle, daughter of Nacha by Patchouli (Patchouli is by Khalife out of L'Missou)

L'Karla Diane von Kaboul was by Papsi out of Nasi, both imported from Afghanistan. She was perhaps a smooth Afghan, often confused at the time with the Sloughi. She belonged to Dr. Carbonne.

We find Luuk again coming to France through the Schuru esch Schams dogs.

Finally, Q'Rouicha Ighoud is found in the lines of de Slouaz kennel. She is by Jnah de Dar Salem out of L'Hzala Zrim, both thought to have been imported from North Africa, the names suggesting Morocco. Because of the uncertain North African origins of D'Selma and Q'Rouicha-Ighoud, we cannot reliably include them in the combined impacts of the North African bitches. However, the impacts of Viana des Grimoires de Kerfa and Nacha together account for 11.1624%.

### **The Netherlands (22 founder bitches)**

The bitches with the highest impact on today's Dutch bred Sloughis are, in decreasing order of impact, Damiela, imported from Libya by the van Duyvenbode, Luuk already cited above, Xoute des Oudaia from Morocco, Operette from Algeria, and Richa el Djerid from Tunisia. They are followed by Abla from Tunisia, Mascha from Tunisia and Muna (see above under Germany). The combined impact of the 4 most influential North African bitches (Damiela, Xoute, Operette and Richa) is 28.8337%, they have an impact on more than a quarter of the Dutch Sloughi population, as compared to Luuk's impact of 8.1508%. The 4 influential North African bitches in the Dutch breeding, represent all 4 countries of origin of the Sloughi breed: Algeria, Libya, Morocco and Tunisia, in spite of a low number of dogs born between 1993 and 2003.



Tunisian Richa el Djerid

Richa shows the tribal cropped up ears and brand marks on her front legs



Libyan Damiela



Tunisian Abla

### **The USA (23 founder bitches)**

The foundation bitches with the most impact on the American breeding are in order of decreasing influence Viana des Grimoires de Kerfa from Morocco, Luuk, Richa from Algeria, Operette from Algeria, P'Bronzette of Tunisian/Algerian lines, and Souad of unknown origins. The lines bringing those founders in the country are for Luuk, the dogs imported from the German Schuru esch Schams kennel, the others from bloodlines of the Kahloul de la Treille kennel. This other bitch also named Richa is a direct import from Algeria to America. The combined impact of Viana, Richa, Operette, P'Bronzette and Souad is 32.1926%, if one removes Souad it is 28.4884%, compared to Luuk's 9.9603%. Part of this situation results from the practice of tight inbreeding in one of the 2 American kennels at the time. One would seriously wish to see new North African female lines added to the American breeding.

### **Europe (other countries in Europe than those listed above, 34 founder bitches)**

The most important founder females in the European breeding other than the countries listed above are Luuk, Damiela from Libya, Operette from Algeria, Suleika Mechra bel Ksiri from Morocco, Richa Talata from Algeria, Muna, and Mascha from Tunisia. Richa Talata is a foundation bitch found only in the UK breeding and is removed from the calculation of combined impacts for this reason. For the other countries the combined impact of North African Damiela, Operette, Suleika and Mascha is 17.9744%, the impact of Muna and Luuk combined is 9.9323%.

In general one should note that the breeding going on in Italy, Switzerland, Scandinavia and the UK does not translate into any foundation bitch having a greater impact than 7%, a much healthier situation similar to that in France.

### **Western breeding as a whole (42 founder females)**

After looking at the situation in the various countries, which show differences in the number of foundation bitches and their impact on the local breeding, we need to see now how the general situation looks. All foundation bitches put together amount to 42. The bitch with the most impact worldwide is by far Luuk, followed by Viana des Grimoires de Kerfa from Morocco, Mascha from Tunisia, Operette from Algeria, Muna and Suleika Mechra Bel Ksiri from Morocco. Three of the 4 countries of Origin of the breed: Morocco, Algeria, Tunisia are each represented by an influential Sloughia. If one includes the 7th most influential bitch, Damiela, all 4 countries of origin are represented. The combined impact of the North African Viana, Mascha, Operette and Suleika is 14.5401%, that of Luuk and Muna is 11.7829%.

One thousand five hundred and sixty two dogs bred between 1993 and 2003 descend from 42 founder bitches, with 15 of them having more than 1% impact, 9 more than 2%, 5 more than 3%, 2 more than 4% and 1 more than 8% (Luuk). The other 27 foundation bitches have an impact under 1%. In terms of gene pool and genetic health, this situation is not extreme compared to other more inbred breeds, but a few founder females still have a large impact while the majority has very little impact on today's Sloughi population. One would like to see a more balanced use of the foundation females and would hope future breeding will aim at correcting this

situation to provide a richer genetic background to the breed. One would also hope to see the breeding concentrating more on foundation bitches whose origins are known to be in the countries of Morocco, Algeria, Tunisia and Libya.

## THE DOGS

Let us look now at the founder males and their impact on today's population of Western bred Sloughis. Before going into the details per country, one general comment must be made. The number of males on which the Western Sloughi breeding is based, is about half that of the number of founder bitches. In bold are the six dogs with the highest impact in each country, in bold red the two dogs with the highest impact.

Dogs 24	Germany 468	Holland 56	France 486	USA 205	Europe 403	Total 1562
Khalife 1961	1.030920306	<b>3.766741071</b>	<b>3.325687613</b>	0.10241997	<b>4.77417598</b>	2.588824518
Morjane 1963	0.292707916	0.270298549	0.492099087	1.38314596	0.428306258	0.532842385
Amen Ouled Nails 1966	<b>13.94820254</b>	<b>8.394949777</b>	<b>4.776716821</b>	<b>10.20186261</b>	<b>7.45743593</b>	<b>8.928278924</b>
Shidi Mechra-Bel-Ksiri 1965	<b>3.64442483</b>	2.45186942	1.242002636	1.291087081	<b>3.410032665</b>	2.527605709
O'Dalگو 1965	0.502679287	0	2.736987204	<b>3.704268293</b>	1.047320875	1.75856274
Othello 1965	<b>3.208988548</b>	<b>5.120849609</b>	<b>3.012122637</b>	<b>4.724954745</b>	<b>5.072218372</b>	<b>3.827412272</b>
Quitus 1967	<b>12.18000885</b>	<b>7.889229911</b>	2.218967014	<b>8.997475229</b>	<b>6.476693355</b>	<b>7.191582556</b>
Ramsa 1968	0.653128339	0.122070313	0.848162616	0.12076029	0.234932343	0.536046535
Shab Ben Alojazaer 1968	0	0	0	0	0.501427284	0.129369523
Sloughi Ben 1971	1.516175881	<b>4.457310268</b>	0.282921811	0.314405488	1.184233483	0.889097011
Vero del Ksiri 1972	0.776241987	<b>2.971540179</b>	0.005626286	0.047637195	0.58969351	0.39271942
Vick D'Ouled Dlim 1972	<b>1.188568376</b>	0	<b>6.27652392</b>	<b>10.16291921</b>	2.256029001	<b>4.224851953</b>
Jenna 1974	0.539196047	2.232142857	<b>7.684702932</b>	0.045731707	<b>4.871180986</b>	<b>3.815345911</b>
Boustan 1975	0.030048077	0	0	0.106707317	0	0.023007362
Roustan 1975	0	0	0.106095679	0	0.49433933	0.160551376
Srab II 1975	0.112680288	0	0	0.491615854	0	0.09828145
Masoud 1975	0.569244124	0.795200893	0	0	0.11049938	0.1990637
Laba'An II Al-Khalij 1977	0	0	<b>3.567065329</b>	0	1.589640199	1.519986396
Jnah Ouled Salem 1984	1.091746795	0.446428571	0.147890947	0	0.57382134	0.521166773
Rais 1985	0.572582799	0.669642857	2.028677984	0	0.538926799	0.941801376
H'Mami 1989	0.360576923	0	0	1.646341463	0	0.324103713
Stak 1989	0.120192308	0	0.33436214	1.158536585	2.915632754	1.044334187
G'zal Ouled Laouichat 1991	<b>4.226762821</b>	0	2.481995885	<b>3.75</b>	0.821960298	<b>2.742877721</b>
Dukal U. bershebas el Abid 1999	0.854700855	0	0	0	1.240694789	0.576184379

### Germany (21 founder dogs)

We face again the same pattern as with the bitches. The impact of the foundation males of the German breeding is highly skewed by the foundation dogs of the prolific Schuru esch Schams kennel. The most influential sires by far are Amen Ouled Nails from Morocco and Quitus from Algeria. They are followed far behind by G'Zal Ouled Laouichat from Morocco, Shidi Mechra bel Ksiri from Morocco, Othello from Algeria, and Vick D'Ouled Dlim from Morocco. No male from Tunisia reaches the level of impact of these 4 Moroccan and 2 Algerian dogs. There is no foundation male from Libya in the German breeding dogs studied here. The impact of Amen Ouled Nails and Quitus combined is 26.1282%. None of the other 15 males at the beginning of the German breeding reaches an impact above 1.8%. In other words only 6 males, 2 of which most importantly, have a significant impact on the German Sloughi population, resulting in a significant narrowing of the gene pool on the male side of the German Sloughi pedigrees.



Amen Ouled Nails



Quitus

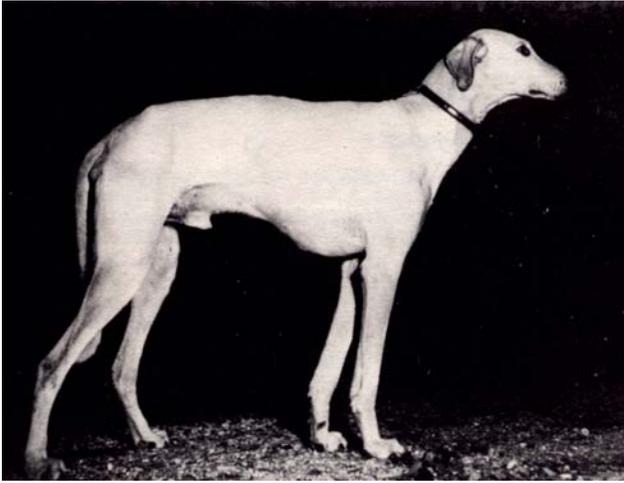


Shidi Mechra Bel Ksiri

### France (18 founder dogs)

Although French breeding is based on a large number of foundation bitches, the French used a smaller number of foundation males. However, none of the males here reaches the level of impact of Amen Ouled Nails and Quitus in Germany, none reaches an impact level of 8%, which is good news for the French breeding. They are, in decreasing importance of their impact as follows: Jenna, Vick d'Ouled Dlim, Amen Ouled Nails, Laba'An II Al-Khalij, Khalife and Othello. Vick d'Ouled Dlim and Amen Ouled Nails are from Morocco, Khalife and Othello are from Algeria. Jenna's story is complicated. He is said to be an import from Syria from the Oreitna tribe. This would tend to show he was a smooth Saluki. However nothing could be found about the existence of this tribe. Also another dog or bitch named J'Thasma, born the same day, was registered at the same time as Jenna - if he was imported he was with a sibling, an unusual scenario. To add to the puzzle, a third dog named Joker was registered as being born 3 weeks after Jenna and J'Thesma.- was it perhaps a third sibling or truly a dog born another day? There is probably no way of knowing. Laba'An II Al-Khalij is a smooth Saluki from Dubai, Saudi Arabia, bred by John Burchard, and owned by H.P Oechslein and S. Leimbacher in Switzerland. This dog was bred to various bitches of the breed Sloughi, Azawakh and Saluki in the 1970s.

The combined impact of the North African dogs on the French breeding is 17.3909%. If one assumes that Jenna is a Saluki, the Saluki impact of both combined is 11.2517%. However if Jenna is not a smooth Saluki, then the Saluki impact on the French breeding is 3.5670%. Laba'An II Al-Khalij has no impact in Germany, the Netherlands and the USA, and a small impact of 1.589640199% outside of France in the European countries not listed separately.



Khalife © Brandilly ~ Othello



Laba'An II Al-Khalij

### **The Netherlands (13 founder dogs)**

The Netherlands, though one of the prominent historical countries in the breed, has only 13 foundation dogs in its breeding. However this may be a direct consequence of the low number of dogs bred between 1993 and 2003. In fact none of these males reaches an impact higher than 8.5%. We find again that Amen Ouled Nails from Morocco and Quitus from Algeria are the most influential males in the Dutch Sloughi breeding. They are followed by Othello from Algeria, Sloughi Ben from Tunisia, Khalife from Algeria and Vero d'El Ksiri from Morocco. The seven other males have impacts no larger than 2.5% and less than 1%. In general it looks like a relatively healthy situation, although one would wish to see more male lines.



Vero d'El Ksiri

### **The USA (18 founder dogs)**

In this country we find again Moroccan Amen Ouled Nails leading, followed closely by Vick D'Ouled Dlim, Quitus, Othello, G'Zal Ouled Laouichat and O'Dalgo. In other words the American breeding is dominated by 3 dogs from Morocco, 2 from Algeria and 1 of unknown origin. The first 3 (Amen, Vick and Quitus) account for a combined impact of 29.3621%, a situation in need of improvement if one looks at increasing the gene pool on the male side of the American pedigrees. This again is partly the result of tight inbreeding and the practice of repeated use of the same sire in one of the two American kennels whose dogs are evaluated in this study.

### **Europe (21 founder dogs)**

In other European countries not listed separately, the most influential males are Moroccan Amen Ouled Nails, Algerian Quitus, Algerian Othello, Jenna, Algerian Khalife and Moroccan Shidi Mechra Bel Ksiri. None of these dogs has an impact higher than 7.5%. These influential males represent only 2 of the countries of origin of the Sloughi in this breeding, Morocco and Algeria.

### **Western Sloughi Breeding as a whole (24 founder dogs)**

The most influential males are Moroccan Amen Ouled Nails, Algerian Quitus, Moroccan Vick d'Ouled Dlim, Algerian Othello, Jenna and Moroccan G'Zal Ouled Laouichat with none of these males having more impact than 9%.

One thousand five hundred and sixty two dogs bred between 1993 and 2003 descend from 24 founder males. Of these 24 founder males at the beginning of the pedigrees, 11 dogs have an impact above 1%, 8 an impact above 2%, 5 an impact above 3%, 2 an impact above 7%. This is in general a somewhat evened out situation, which however hides the bias towards certain studs in some of the countries whose breeding is included in this study.

Compared to the Moroccan and Algerian sires, the Tunisian and Libyan dogs do not have much impact on the male side of the Western Bred Sloughis used in this study.



G'zal Ouled Laouichat © Schritt

### Impact of the siblings in our study.

As noted above in the first table, we have 2 pairs of male/female siblings as founders in this study: Tunisian Masoud and Mascha, Moroccan Vick and Vassya D'ouled Dlim. Since they are sibs they share 50% of their genetic background. We checked to see their combined impact in the various countries.

	Germany 468	Netherlands 56	France 486	USA 205	Europe 403	Total 1562
Masoud and Mascha	8.9592	4.2131	1.5062 only Mascha	2.7105 only Mascha	3.0357	4.2919
Vick and Vassya d'Ouled Dlim	2.6647	2.9715 only Vassya	6.2821	10.1676	2.8456	4.6175

Of the siblings Masoud & Mascha, Mascha has a much higher impact; of the siblings Vassya & Vick D'Ouled Dlim, Vick has the most influential impact.

### Conclusion:

What do these statistics show us in general about the current status of Western Sloughi Breeding?

The results show on the one hand a relatively large number of founder dogs and bitches, which is good for the genetic health of this breed. But on the other hand, it shows a high Coefficient of Inbreeding on a few of these dogs and bitches. Why is this of concern? Inbreeding has always been used by breeders as a tool to “fix” a phenotype. However its original purpose was to fix the type of “breeds” created by man deliberately by crossing certain breeds with one another. Inbreeding was then used to fix and perpetuate the phenotype that the breeders wanted to preserve out of such crosses. In a breed like the Sloughi which dates too far back to tell us how it originated, inbreeding is not necessary to fix a type. Inbreeding reduces genetic variability in a breed, it can increase the sameness (homozygosity) in many individuals of good healthy genes, but it does the same in many individuals for defective genes.

Some dogs and bitches are very influential in all countries which we included in this project, others are very influential in certain countries only. Most of the Sloughi breeders, except for one, do not produce large numbers of puppies, and several do not practice very tight inbreeding. It is a good thing, because this less extreme breeding results in a more even use of foundation Sloughis, particularly when one looks at the bitches, and ensures a more varied gene pool. As soon as a kennel starts producing many more dogs than the others, or inbreeds too much, then the founder dogs and bitches of these kennels dominate, genetically speaking, the breed as a whole.

The statistics also show us the impact of the “mistakes of the 1970’s” – dogs and bitches which were included in the Sloughi breeding which have doubtful North African origins. At the time Sloughis were hard to find and Genetics was an obscure field of study. The looks alone of a particular dog or bitch, and the more or less knowledgeable evaluations of judges, enabled the incorporation of dogs and bitches which should not have been bred from, and should not have a high impact on the breed. Just because a dog may look like a Sloughi does not make him automatically a Sloughi. Crosses between Afghan hound and Greyhound, or Afghan hound and Doberman can look like Sloughis. It is the genome underlying the looks that makes the breed. The fields of Biology and Genetics show us that animals can look alike but can have completely different genetic make-ups. These dogs of questionable origins are in today’s Western bred bloodlines and cannot now be removed. However the Western breeding of the Sloughi is also based on a much larger number of dogs and bitches coming from North Africa. Some of them are very influential, some less so.

We hope to have shown with these results the strengths and the weaknesses of the Western Sloughi breeding, and that ultimately breeders will strive to move away from *inbreeding* on the questionable founders and focus their breeding programs on lines securely based in North Africa. It will be difficult as some of these founders are deeply anchored in the breed. The good news for the breed is that Sloughis can still be found in all 4 countries of origin of the breed: Morocco, Algeria, Tunisia and Libya. There are also some bloodlines in the current Western Sloughi breeding which could be taken more advantage of, because their North African founders are there but underrepresented in today’s Western bred Sloughis.



Sabib de la Ruine (Othello x Operette)

Acknowledgements: this study would have been impossible without Peter van Arkel’s invaluable help in compiling the most comprehensive data base for the breed to date, and in calculating the statistics used in this study. We also thank all those who have contributed to the data base, provided photographs and various documents or shared their knowledge about some of these foundation Sloughis.

© Dominique de Caprona 2006