

Please excuse delay, communicated you & Ted -
still trying grant # - not regular faculty member - univ. x -
Soc. - - -

not - yes - accept - if ^{can} not - Ted Cavender can fill in

Our coop. - on joint paper ~~to publish~~
→ 3 separate oral presentations -

Ted
stop by
pick up
specimens

* Note name
alpinus syn.
selection
problem just
change Baszaly
rhodopus - how to interpret.

you -
Ted -

me - latest summary genetic studies - elect. - DNA -
DNA chromosomes - review ex. rapidly evolving morph
my major - line. ~~not~~ suggest solution

March 11, 1987

WHAT should we call it? mykates

Dr. R. J. Behnke,
Department of Fisheries & Wildlife Biology,
Colorado State University, Fort Collins,
Colorado 80523, U. S. A.

Dear Dr. R. J. Behnke:

International Symposium on Charrs and Masu Salmon will be held in October 3 - 10, 1988 at Hokkaido University. Of course I will attend this symposium. I am also looking forward to meeting you and Dr. T. M. Cavender again in Sapporo.

If you can agree with my plan, I will present the following subject for the symposium and discuss the affinity among leucomenoid, malmoid and alpinoid charrs.

Kimura, S., R. J. Behnke and T. M. Cavender: The taxonomical status of Salvelinus leucomaenis complex found in Japan.

How do you think about this title ?

Please give my best regards to your family and staffs in your laboratory.

Sincerely yours,

S. Kimura

S. Kimura,
Department of Fisheries,
Faculty of Agriculture,
Kyushu University 46-04,
Fukuoka, 812, J A P A N

Professor S. Kimura
Department of Fisheries
Faculty of Agriculture
Kyushu University 46-04
Fukuoka, 812, Japan

Air Mail

cc T. Coulander

Dear Professor Kimura:

Please excuse the delay for communicating with you and Ted Coulander. I have been looking for opportunities to obtain funds to come to Hokkaido for the charr symposium. Because I ~~am~~ have never been a regular full-time faculty member, university opportunities such as sabbatical leave and travel grants are not available to me. I am now inquiring with the U.S. Department of Agriculture about possibilities of a grant. In any event, in reply to your request that I serve as a cochairman for session 3 (taxonomy and systematics), I will accept, but if I cannot attend, I will ask Ted Coulander if he would agree to be a "reserve" chairman.

You, Ted Coulander and me can plan to present individual papers at the symposium, that can be combined into one published paper on the present status of ~~phy~~ our understanding of phylogeny and classification of the subgenus Salvelinus, ~~is~~ relationships between and among "leucosomoid", "malmooid" and "alpenoid" charrs. You might concentrate on Japanese forms, Ted can review the latest on osteology ↓

and karyotypes and I could review the latest information from electrophoresis, DNA analysis, etc. comparing various methods for agreement and disagreement on phylogenetic relationships.

My current ~~concept~~ is that the bull trout of North America ~~and~~ (confluentus) and stone char of Kamchatka (albus) are sister species ^{in the} ~~from a~~ leucomenoid group and that alpinus and malma are very closely related to each other. ~~but~~ ^{yet} contain examples of rapid evolutionary change.

I received a letter from Canadian ichthyologists pointing out that Salvelinus alpinus is a synonym of Salvelinus salvelinus according to article 68 of the international code of zoological nomenclature. When Linnaeus' Salmo alpinus, S. salvelinus, and S. umbla, were placed in the genus Salvelinus, the species name salvelinus becomes the valid name by the rule of "absolute tautonymy" (article 68). We'll have to decide if we are to designate the Arctic char as S. salvelinus rather than S. alpinus.

Sincerely,



Montreal, June 12 1987

Dr. Robert Behnke
Colorado State University
Department of Fishery
and Wildlife Biology
FORT Collins, Colorado 80523
U.S.A.

Dear Dr. Behnke,

We read with great interest your comments in your letter of May 14, 1987, that Pierre Dumont has shown us concerning the name Salvelinus salvelinus. For us to propose this name, after several other authors (Heckel 1851; Heckel and Kner 1860; Fatio 1890, Henschel 1890; Smitt 1895; Matschie, Reichenow, Tornier and Pappenheim 1909 (1961); Gossot 1946), we relied on (now in 1985) the Article 68 from the International Code of Zoological Nomenclature, on the Type-species fixed in the original publication, paragraph (e) Absolute Tautonymy, which says:

"ABSOLUTE TAUTONYMY.-If any valid species-group name or its cited synonym, originally included in a nominal genus-group taxon [(Art. 69a (i))], is identical with the name of that taxon, the nominal species-group taxon denoted by that name (if available) is the type species by absolute tautonymy."

1. This is an absolute rule which cancels all others: "that nominal species is the type-species", which is Salmo salvelinus Linné, 1758.

.../2

2. In the International Code, there are two other rules:

- a. Article 18, Example (2), which plenty applies here.
- b. Article 69B, Example (2), where, in addition, Salvelinus salvelinus (Linné, 1758) has become a "type by virtual tautonymy".

3. In Richardson, 1836 Fauna boreali-americana is:

- a. on page 169, "Sub-genus, Salvelinus", which is equivalent to a genus.
- b. on a page 139, "Salmo salvelinus" taken from Cuvier.
- b. note *, page 139, "Salmo salvelinus from Nilsson who invented the "near-generic" name of Salvelini."
- b. note *, 1, page 139, "Salmo salvelinus" from Agassiz.

c. thus, even in Richardson was the species salvelinus left to combine with his generic ("Sub-genus") name of Salvelinus: this is when Richardson published his generic name Salvelinus of page 169, when the specific name by tautonymy -- species salvelinus -- was severally mentioned in former page 139. Else, in Richardson 1836 was the specific name salvelinus already available in Linné 1758.

4. Now, let us consider Linné's names:

a. in Systema naturae, there are consecutively cited "Salmo alpinus, Salmo Salvelinus, Salmo Umbla".

b. because Salmo alpinus was cited first in his Systema naturae, people thought this would be the type-species; but, this is only when genus Salmo was the generic, overencompassing all such species -- of what we today call Salmonidae. Else, if there had been no genus Salvelinus, then, the Arctic charr (red charr in England; omble chevalier in France and Switzerland) would have the name, today, of Salmo alpinus. - Note. Why did Linné put Salmo alpinus at first? This is because he was a Swedish and he had described, in enough detail, Salmo alpinus in his work Lachesis lapponica, in 1732, during a trip to Lapland, when HE caught this species in Lake Virihaure, northern Sweden, near the border of Norway (approx. long. 67° 26'N., lat. 16° 35'E.). This is why he put, in his Systema naturae, "Habitat in Lapponiae, Angliae alpihus, solus", that is: habitat in the Alps [mountains] of Lapland and England, only. Else, the type locality is Lake Virihaure, northern (Arctic) Sweden, for Salmo alpinus.

c. now, "Salmo Umbla" may be left off since it comes as a synonym: it was from "Helvetiae" (Switzerland), most probably from Lake Léman (Lake of Geneva), as according to Petri ARTEDI 1738 *Synonymia nominum piscium*, page 26, No. 11, lines 7 to 17, it was from Lake Léman and called "Umblae alterae etc.", else: another charr (une seconde "espèce" d'ombles: = altera).

d. Salmo salvelinus: when genus Salvelinus was first named by Richardson in 1836, then, already before this time (1836) was existing the species salvelinus reported by Linné (1758): so, the species salvelinus was an "originally included nominal species" (1758) in the "generic name" Salvelinus (1836), and making "that nominal species [species Salvelinus salvelinus (Linné, 1758)] is ipso facto the type-species [species Salmo salvelinus (Linné, 1758)]".

5. In addition, there never was, from 1758 down to now (1987), any published article or study, or a university thesis, based on serious systematics JUSTIFYING the right to transfer the species Salmo alpinus (Salvelinus alpinus) from its native place, Sweden,, to North America. Nor was there one on Salmo salvelinus or Salmo Umbla. Thus, the only place where we could intervene was to apply an already preexisting published means: it was by the rule of "absolute tautonymy" which is, by no means, extremely powerful. We should like Dr. Robert Behnke to see thus and comply with it as much as is within his powerful grasp.

Now, let us consider the genus Salmo. The type-species is evidently Salmo salar Linné, 1758. What about the status of nominal name and eventual Salmo salmo? Well, when was this last nominal species created or invented? We believe it was by Valenciennes in Cuvier and Valenciennes, 1849, Histoire naturelle des poissons, Vol. 22. Since this was in 1849, as a consequence much later than 1758, the expression Salmo salmo is not a type-species: it is only an ulterior synonym. Concerning your example, we believe that your argumentation would be good but at the condition that Linné would have called in 1758 the Atlantic salmon, let us say, Omiscomaycush salmo instead of Salmo salar. Then, the species would be called today Salmo salmo. If somebody now discovers a new species for an isolated population of Salmo salar, he should have enough imagination for seeking a new name, other than Salmo salmo: this species could be called, for example, Salmo dulcicolus or Salmo lacubus.

The case of tautonymy must apply as the type-species was described when, or before, the genus was named (created), NOT AFTER. Please read again the two first part of the sentence at Article 68(e), here first page of this letter.

We hope that these considerations shall answer your question, and that you will be pleased to possess thus further information.

Sincerely,

Vianney Legendre.
Vianney Legendre

Jacques F. Bergeron
Jacques F. Bergeron

Service de l'aménagement et
de l'exploitation de la faune
Direction régionale de Montréal
6255, 13^e avenue
Montréal, Québec, Canada
H1X 3E6

*By telephone at Montréal, my son Pierre Legendre
told me to salute you with high-winding arms!
("saluer à grands tours de bras"): thus go colloquial.*

N. L.

C.C. André Laforte, Directeur, Direction régionale de Montréal,
 Montréal
 Robert Parent, Chef de service par intérim, S.A.E.F.,
 Montréal

COPIES ENVOYÉES A MM.:

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 DESJARDINS, Sylvie, Montréal
 DUBÉ, Jean, Montréal
 DULUDE, Pierre, Québec
 DUMONT, Pierre, Montréal
 FORTIN, Réjean, Montréal
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 PAGEAU, Gérard, Montréal

PAULHUS, Pierre-J., Québec
POMERLEAU, Camille, Québec
PRÉVOST, Gustave, Saint-Jovite
PROVOST, Jean, Mont-Laurier
RENAUD, Michel, Saint-Faustin
ROMAN, Benigno, Barcelone
ROULEAU, Aubin, Sept-Iles
SCOTT, W. Beverley, St. Andrews, N. B.
TURGEON, Yvan, Québec

May 14, 87

Dear Mr. Dumont:

Many thanks for the information on the Quebec huchen and on nomenclature of Arctic char. According to the rule of tautonymie, the type species of the genus Salvelinus must be Salvelinus salvelinus. However, it is not clear to me if the type of a genus can be a synonym or must it take precedent? For example, if type species of genus Salmo is S. salm, and someone now describes a new species Salmo salmo for an isolated population of Atlantic salmon -- must the binomial of Atlantic salmon now be changed to S. salmo due to the rule of tautonymie?

The use of S. salvelinus in the article published in the Drottningholm Rep. 61, is not based on the rule of tautonymie, but under an erroneous classification of Salvelinus developed by L. Nyman who recognized three species based on allelic frequencies of an esterase locus. That is, the fish referred to in the article is called S. salvelinus because

it conformed to the allelic frequency of
S. salvelinus as designated by Nyman (erroneously).

The enclosed copy of a review I just
completed, elaborates on the subject.

Sincerely,

R. Behre



Montreal, June 12 1987

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Colorado State University
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FORT Collins, Colorado 80523
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told me to salute you with high-winding arms!
("saluer à grands tours de bras"): thus go colloquial.*

N. L.



The Ohio State University

Museum of Zoology

1813 North High Street
Columbus, Ohio 43210-1394

Phone 614-422-8560

Feb. 9, 1987

Dear Bob,

Thanks for your letter in January. I meant to write you when Kimura was here about your suggestion for a 3-way paper. Hopefully I can do better at answering letters this year. Things seem to go bad when I have to teach at Stone Lab in the summer.

Prof. Kimura seemed to agree to your idea about cooperating on a review paper dealing with morphological diversity present within the genus Salvelinus for the meetings in Hokkaido. There are some ideas I have for such a paper but feel you should have the lead on this. If your plans have changed about going maybe ^{you} also want to do something different. Kimura and I made a good start on imbricus - leucomensis taxonomy as well as assembling osteological materials for comparing Japanese with N.A. Salvelinus. We would try to get something on this ready for the Churr Symposium. We did complete the karyotype and analysis of imbricus which seems to be identical with leucomensis. This study is done and is in the process of being written up. There is an unusual pair of acrocentric chromosomes in the same position as the odd banded pair in confluentus. I think Phillips may be talking about this chromosome although I haven't seen her paper. I gave her NSF proposal the highest rating but it may not get approval until funds are available. I need to hear from you about the black charr specimen you have that I didn't get to examine yet. What have you

figured out about the nomenclature involving Kronocius, albus
stone char, black char, longhead char. Kimura's photograph of the
black char is very different looking fish than the longhead specimen
I examined at your place.

Back to chromosome work, I submitted photokaryotypes
of confluentus as these didn't get published in the Cherr
Symposium volume (Linnegren). They included a look at the variations
in the extra pair of bivalved chromosomes. I am not familiar
with any ^{recent} Russian papers that show photokaryotypes of leucomaculatus.
The previous Soviet publications have been very unreliable both
in karyological work & in Selvelinus taxonomy (Vesiljev & Viktorovskiy).
I hope to have more karyotypes done on North American malma
populations. The NOR work is the next logical step and
certainly adds more information. I am not set up to work
with NOR's. The gross morphology work is the simplest
and cheapest laboratory research I know of involving chromosomes.
Kimura learned the basic techniques when he was here. We
developed a procedure so he can ship cells ~~to~~ for the price
of a few airmail stamps. This type of karyology is mostly
overpriced on grant proposals.

One morphological variation of interest to me is the
independent increase of eye size in deepwater like populations
of Selvelinus. Have you looked into this much?

Best Regards,
Ted



Gouvernement du Québec
 Ministère du Loisir,
 de la Chasse et de la Pêche
 Direction régionale de Montréal

Service de l'aménagement et de
 l'exploitation de la faune
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 MONTRÉAL (Québec)
 H1X 3E6

*Legendre's
 S. schellmayeri cc for Miller*

BOUVERNEMENT DU QUÉBEC
 Courrier et Messageries
 Longueuil, QC



Charr Symposium

Dr. Robert Behnke
 Colorado State University
 Department of Fishery
 and Wildlife Biology
 FORT COLLINS, Colorado 80523
 U.S.A.

Vasilyeva, Ye. D. 1981. Ozernyi golets,
Salvelinus alpinus L., iz basseina reki
 Zarubikha (k voprosu o gol'tsakh i
 paliyskh Kol'skogo poluostrova). V.I. 21(2):232-
 247.

L. Noskovoye → Zarubikha A. → Barent sea, etc.

Table 6

golets		paliya	
♂ N=27	♀ N=28	♂ N=14	♀
19-26 (22.8)	20-26 (23.1)	22-26 (23.7)	25
59-64 (61.3)	60-66 (61.9)	62-65 (63.4)	62
36-55 (44.2)	36-49 (43.0)	38-52 (44.5)	41

golets - slower growth.

- but all one pop. !!