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## EDITORIAL

Le Conseil d'Administration de BEDIM s'est réuni le 23 mai 2003. Il a été informé par son Président, Jacques Hardouin, de son intention irrévocable de se retirer des activités bénévoles qu'il exerce au sein de notre association internationale. La date fatidique est le 27 septembre 2004, date du 75<sup>e</sup> anniversaire de l'intéressé.

Les membres, les abonnés et les lecteurs occasionnels savent que la coordination des activités de BEDIM est assurée depuis près de quinze ans par son Président. Celui-ci a entrepris une série de démarches dans beaucoup de directions, tant en Belgique qu'à l'étranger, en espérant identifier une institution intéressée par la reprise de BEDIM dans ses structures, en l'adaptant si nécessaire. Hélas, aucune démarche n'a abouti concrètement, même si des marques certaines d'intérêt se sont concrétisées par un élargissement du nombre de membres du Conseil d'Administration. L'argumentation invoquée est, presque partout, que cela nécessite une personne avec des compétences et une certaine expérience des villages et des élevages traditionnels tropicaux, et donc de l'argent pour payer cette personne, même si cela ne représente pas un temps plein.

Cet éditorial a pour but de vous informer tous. Mais aussi de faire appel à toutes les suggestions imaginables pour assurer la continuité de BEDIM, même si le nom et le cadre doivent être modifiés. Si vous avez des idées, transmettez-les par la poste à l'adresse habituelle de Gembloux ou par courrier électronique au secrétariat technique chez Mme Muriel Goorickx [goorickx.m@fsagx.ac.be](mailto:goorickx.m@fsagx.ac.be) ou au secrétaire de l'association Dr Eric Thys [ethys@itq.be](mailto:ethys@itq.be)

D'avance merci. Mais ne traînez pas ...

Eric Thys, Jacques Hardouin

## **NOUVELLES DE L'ASSOCIATION**

### **ASSEMBLEE GENERALE EXTRAORDINAIRE**

Le Bulletin précédent faisait état de la modification officielle des statuts de notre association et annonçait la nomination d'administrateurs supplémentaires. Une Assemblée Générale Extraordinaire a été convoquée le 6 mai 2003, uniquement pour procéder à des élections. Les membres actifs, présents ou représentés, ont élu les cinq candidats qui se présentaient :

**Madame Daou Véronique JOIRIS, Centre d'Anthropologie Culturelle (CAC) de l'Université Libre de Bruxelles, Belgique.**

**Monsieur André BULDGEN, Unité de Zootechnie, Faculté Universitaire des Sciences Agronomiques de Gembloux, Belgique.**

**Monsieur Ferran JORI, membre fondateur, responsable de projets en Amérique du Sud, basé au Brésil, Institut d'Elevage et de Médecine Vétérinaire des Pays Tropicaux, Montpellier, France.**

**Monsieur Maurizio PAOLETTI , Département de Biologie, Université de Padova, Italie.**

**Monsieur François MALAISSE, Professeur Honoraire d'Ecologie, Faculté Universitaire des Sciences Agronomiques de Gembloux, Belgique.**

**Félicitations à tous ces nouveaux administrateurs.**

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### **CONSEIL D'ADMINISTRATION**

Un Conseil d'Administration s'est tenu peu après l'Assemblée Générale Extraordinaire. Parmi les sujets examinés, les principales décisions suivantes ont été prises :

**a/ Charges confiées aux administrateurs :**

**J. Hardouin : Président, préparation du Bulletin ;**

**E. Thys : Secrétaire, comptes rendus divers et contact avec FAO ;**

**M. J. Desmet (Mme) : Trésorière, finances et comptes ;**

**A. Roubinkova (Mme) : Documentation ;**

**A. Buldgen : Techniques de production ;**

**D. V. Joiris (Mme) : Anthropologie culturelle;**

**F. Jori : Amérique latine ;**

**M. Paoletti : Nutrition humaine ;**

**F. Malaisse : Ecologie et biodiversité.**

b/ Approbation des comptes et du bilan 2002, ainsi que des budgets 2003 et 2004.

c/ Avenir de BEDIM, suite à l'arrêt irrévocable des activités du Président J. Hardouin le 27 septembre 2004 (75 ans).

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## **BASE DE DONNEES BEDIM : BDB**

Le Conseil d'Administration a décidé d'informatiser progressivement l'ensemble de nos documents techniques sur le mini-élevage : livres, thèses, mémoires, ... et surtout articles de revues. Tous ces documents se présentent évidemment en version papier. Les caractéristiques de chaque document (auteurs, titres, sources, année, mots-clés,...) seront saisies sur ordinateur et constitueront la Base de Données de BEDIM, qui sera accessible à chacun prochainement selon des modalités définies plus tard. Ce travail a commencé par quelques essais. Actuellement, les nouveaux documents sont encodés. Progressivement, le même travail sera entrepris rétrospectivement. Cela a évidemment un coût. Le Conseil d'Administration cherche du financement, même partiel, pour cette modernisation indispensable. Si vous connaissez des bienfaiteurs, privés ou institutionnels, disposés à nous aider, informez le Secrétariat qui prendra contact avec les intéressés. Le coût de l'encodage de toutes les archives est estimé actuellement à +/- 6 000 euros . Plusieurs dons de dizaines ou de centaines d'euros permettraient de couvrir ce coût.

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## **ACTUALITES**

### **PROJET DABAC**

Une intéressante note sur le nouveau projet « DABAC », dont la cellule de coordination se trouve au Gabon, est parue dans le Bulletin précédent en pages 10 et 11. Le Secrétariat de BEDIM regrette beaucoup qu'une omission ait eu lieu lors de la préparation de ce Bulletin, car son auteur n'est pas mentionné. Tous ceux qui s'intéressent au mini-élevage en Afrique Centrale et en Afrique Occidentale savent évidemment que le coordinateur du projet est notre ami Patrick HOUBEN. C'est peut-être cette renommée qui a provoqué l'oubli de son nom, tant il est connu.

Néanmoins, cher Patrick, reçois toutes mes excuses.

J.H.

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## VSF-Belgium

L'ONG belge bien connue, Vétérinaires Sans Frontières VSF-B (Dierenartsen Zonder Grenzen DZG-B), a été récompensée pour son action très positive depuis plusieurs années dans le secteur de la production et de la santé animale dans les pays en développement. Elle a en effet reçu, le 24 janvier 2003, le PRIX ARMAND FERON 2002 attribué par le Département Vétérinaire de l'Institut de Médecine Tropicale d'Anvers (Belgique) pour sa *contribution significative au développement rural dans les pays du Tiers-Monde*.

L'association BEDIM est heureuse de féliciter VSF-B pour cette reconnaissance.

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## COBAYES DE BOUCHERIE

L'intérêt du cobaye domestique (*Cavia porcellus*) élevé pour la boucherie ne faiblit pas en Afrique. Assez récemment, une précision importante est revenue dans une petite note qui spécifiait que ce cochon d'Inde, exploité pour sa viande, serait un descendant direct du cobaye sauvage (*Cavia aperea*) encore présent dans quelques pays d'Amérique du Sud.

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## UN NOUVEAU RONGEUR INTERESSANT

Des informations en provenance du Nigéria font état d'un intérêt marqué pour le « rat du Nil » ou « rat roussard » *Arvicanthis niloticus* comme source de viande. Toutefois, cette espèce fait l'objet d'une sur-exploitation par chasse incontrôlée, avec tous les risques que cela implique. Des tentatives pour élever ce petit rongeur en captivité sont en cours.

Tout lecteur du Bulletin BEDIM qui dispose d'information en la matière est prié de le faire savoir au Secrétariat. Merci.

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## BOURSES BELGES D'ETUDES OU DE STAGES

La coopération belge peut attribuer des bourses d'études ou de stages à des ressortissants de pays en développement. Ces bourses seront attribuées en priorité aux personnes se spécialisant dans un des domaines prioritaires de la coopération belge.

Pour obtenir les formulaires de candidatures pour les bourses octroyées dans le cadre de la coopération gouvernementale, le candidat boursier doit s'adresser à l'Attaché à la Coopération présent dans son pays d'origine. Dans le cadre de la coopération indirecte, les bourses sont généralement octroyées

**selon des critères différents et le candidat boursier doit s'adresser directement à l'organisme belge concerné.**

**Les demandes d'inscription auprès des universités ou écoles en Belgique doivent être faites par le candidat lui-même. Il va de soi que la connaissance préalable de la langue d'étude est une condition indispensable (en général français, anglais ou néerlandais).**

**Pour toute information sur la coopération belge ou pour obtenir gratuitement la brochure : [www.dgdc.be](http://www.dgdc.be)**

**ou**

**Service public fédéral Affaires étrangères,  
Commerce extérieur et Coopération au Développement  
Direction générale de la Coopération au Développement  
Direction de l'information  
15, rue des Petits Carmes  
1000 Bruxelles  
E-mail : [info.DGCD@diplobel.fed.be](mailto:info.DGCD@diplobel.fed.be)**

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## EDITORIAL

The Board of Trustees met on 23 May 2003 and has been informed by the President Jacques Hardouin that he intends irrevocably to withdraw from the voluntary activities he has in our international association. The fatidical date is the 27 September 2004, 75<sup>th</sup> anniversary of his birth.

Members, subscribers and other readers know that the coordination of all the BEDIM activities is covered since about fifteen years by the President. He undertook during the last years a lot of steps in many directions, in Belgium and abroad, to identify an institution which could accept the taking over of BEDIM in its structures, adapting them if required. Alas, nothing came out, even if evident marks of interest appeared, one of them being the enlargement of our Board of Trustees. The argument against which we are faced is, nearly everywhere, that it would require one competent person with experience in villages and animal production in the tropics. This means indeed money, even if it does not correspond to a full time job.

This editorial aims at informing all of you. But also to call upon you for any possible suggestion for the continuation of BEDIM, even if the name and the framework have to be modified. Would you have ideas, please let them know through the usual postal address at Gembloux-Belgium or by e-mail to the technical secretariat by Mrs Muriel Goorickx [goorickx.m@fsagx.ac.be](mailto:goorickx.m@fsagx.ac.be) or to the association secretary Dr Eric Thys [ethys@itg.be](mailto:ethys@itg.be)

Many thanks in advance. But do not drag too much...

Eric Thys & Jacques Hardouin

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## **NEWS OF THE ASSOCIATION**

### **SPECIAL GENERAL ASSEMBLY**

The previous Bulletin mentioned a statute modification, which is now officially issued. A Special General Assembly has been called accordingly on 6 May 2003, only to elect supplementary administrators. The active members, present or represented, have elected the five candidates :

**Mrs Daou Véronique JOIRIS, Centre d'Anthropologie Culturelle (CAC), Université Libre de Bruxelles, Belgium.**

**Mr André BULDGEN, Unité de Zootechnie, Faculté Universitaire des Sciences Agronomiques de Gembloux, Belgium.**

**Mr Ferran JORI, founding member, in charge of projects in South America, based in Brazil, for the Institut d'Elevage et de Médecine Vétérinaire des Pays Tropicaux CIRAD-EMVT, Montpellier-France.**

**Mr Maurizio PAOLETTI, Professor, Departement of Biology, University of Padova, Italy .**

**Mr François MALAISSE, Professeur Honoraire d'Ecologie, Faculté Universitaire des Sciences Agronomiques de Gembloux, Belgium.**

**Congratulations to all these new administrators.**

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### **BOARD OF TRUSTEES**

**Our board met sometime after the Special General Assembly. Amongst the matters delt with, following decisions were taken on the main topics:**

**a/ Matters entrusted with trustees:**

**J. Hardouin: President, Bulletin set up;  
E. Thys: Secretary, Records and contacts with FAO;  
M. J. Desmet (Mrs): Treasurer, Finances and Accounts.  
A. Roubinkova (Mrs): Documentation;  
A. Buldgen: Techniques of production;  
D. V. Joiris (Mrs): Cultural anthropology;  
F. Jori: Latin America;  
M. Paoletti: Human nutrition;  
F. Malaisse: Ecology and biodiversity.**

**b/ Approval of accounts and balance sheets for 2002, and budgets for 2003 and 2004.**

**c/ Future of BEDIM, following the irrevocable stop of the President J. Hardouin's activities on 27 September 2004 (75 years).**

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**BEDIM DATA BASE : BDB**

The Board of Trustees has decided to record progressively all our technical documents on minilivestock: books, theses, dissertations, ... and mainly articles issued in journals. All these documents exist today under paper form only. The relevant characteristics of each document (authors, titles, sources, year, key-words, ...) will be computerised under the specific BEDIM DATA BASE, which will be accessible to anybody some time later. The work started with a trial, and today any new document is identified by a BDB number. It is expected that the same will shortly happen for the existing archives, retrospectively. But this has evidently a cost. The Board of Trustees is looking for funds, even in part. Would you know possible donors institutions or people, prepared to assist us, please inform the Secretariat who will contact them. Many separate dozens or hundreds of Euros could together cover the total recording cost, +/- 6,000 Euros.

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## NEWS UPDATE

### PROJET DABAC

An interesting note on the new project “DABAC”, with coordination centre located in Gabon, came out in the previous Bulletin in pages 10 and 11. The Secretariat of BEDIM apologizes for an oversight during the Bulletin set up: the name of the paper’s author has been omitted! All those who are concerned by minilivestock in Central and West Africa know indeed that the project coordinator is our friend Patrick HOUBEN. It could happen that his reputation induced his name omission, as it was so evident he is the right man in the right place.

Nevertheless, dear Patrick, accept my apologies.

J. H.

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### VSF-B

The well-known Belgian NGO Vétérinaires Sans Frontières VSF-B (“Veterinaries without Borders”) has been awarded for its very positive role since many years in the field of animal production and health in developing countries. It received indeed on 24 January 2003 the PRIZE ARMAND FERON 2002 granted by the Veterinary Department of the Institute of Tropical Medicine Antwerp-Belgium for its significant contribution to the rural development in Third-world countries.

The BEDIM association is pleased to congratulate VSF-B for this award.

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### GUINEA PIGS FOR MEAT

The interest for guinea pigs *Cavia porcellus* as source of meat keeps on in Africa. Recently, a brief information provided some precision on its origin. The guinea pig present in many households is a direct descent of the wild species *Cavia aperea* still living in some countries of South America.

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## A NEW RODENT OF INTEREST

According to information coming from Nigeria, it seems that *Arvicanthis niloticus* or “Nile rat” represents there an appreciated source of meat. As for grass-cutters, cricetomas and many other rodents, over-exploitation is taking place with all the well-known risks. Attempts to breed in captivity this small rodent are underway.

Would any reader of BEDIM Bulletin know similar cases, please inform the Secretariat. Thanks.

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## BELGIAN STUDY AND TRAINING GRANTS

Belgian Cooperation bodies award study and training grants to nationals of developing countries on the basis of very strict criteria. In the allocation of grants, priority will be given to people specialising in one of the primary areas of Belgian cooperation.

Applications for registration at Belgian universities or colleges must be made by applicants themselves. It goes without saying that prior knowledge of the language of study is an essential condition (in general French, English or Dutch).

For all information on Belgian cooperation and Belgian grants:

[www.dqdc.be](http://www.dqdc.be)

or

Federal Public Service Foreign Affairs,  
Foreign Trade and Development  
Cooperation,  
Directorate-General for Development  
Cooperation,  
Information Department

15 rue des Petits Carmes

1000 Brussels, Belgium

E-mail : [info.DGCD@diplobel.fed.be](mailto:info.DGCD@diplobel.fed.be)

## PRODUCTION ANNEXE DE PROIES VIVANTES POUR L'ELEVAGE DE GRENOUILLES

Extrait de l'article « Elevage contrôlé des grenouilles au Kine (République démocratique du Congo) » paru dans Cahiers Agricultures 2002, 11, 269-274. Avec la permission de l'auteur et du rédacteur en chef de la revue.

### 1. Vers de compost par T. Munyuli Bin Mushambanyi

La technique de vermiculture repose sur l'élevage du ver de terreau dans une caissette (0,5 x 0,25 x 1 m) en bois, doublée intérieurement de plastique. Dans les caissettes, on empile en première couche un mélange de paille de riz, de sorgho, de sciure ou de copeaux de bois. En deuxième couche, on dispose un mélange de sol, de drêche de bière locale et d'épluchures de bananes mûres coupées en petits morceaux. L'humidité est maintenue aux environs de 70-80 %, grâce aux arrosages réguliers à partir de l'eau de l'étang. Les vermisseaux de 3<sup>e</sup> âge utilisés pour la vermiculture ont été récoltés dans les matières organiques en décomposition trouvées dans les champs agricoles voisins (bananeraies, jachères ...) et dans les sols limoneux des berges de la rivière. Le terreau de chaque caissette en bois a été ensemencé avec 10 vers de terre adultes non sexés et une trentaine de vermisseaux, l'ensemencement étant répété tous les 2 mois.

Les matières organiques décomposées par les vers de terreau (*Eudrilus sp. Lombricidae*) sont mises dans les compostes lors du remuage, puis les caissettes sont de nouveau chargées comme au début. Les adultes de coloration noire, longs de 10 à 12 cm ont été élevés sur les terreaux enrichis de fèces de vache et de matière organique en décomposition (troncs et feuilles de bananier, etc.). Le complément alimentaire des vers est assuré par des déchets organiques, épluchure de légumes et de fruits, crotte de caprins, de lapins et d'ovins en poudre (100 g chaque semaine). Il est admis qu'un ver de terreau pond une capsule tous les 7 à 10 jours. En moins de 3 mois, environ 2 000 vermisseaux peuvent émerger de ces capsules et commencer eux aussi à se reproduire dès l'âge de 2 à 3 mois [11]. Le remuage hebdomadaire permet la libération dans l'étang des vers, du plancton et d'autres petits animaux vivants et mobiles dont les grenouilles sont très friandes.

N.B. Analyse de l'article complet : voir Bulletin 11/2 p. 31.

### Summary

Side Production of Live Preys for Frog Breeding. Except from a larger article analyzed in Bulletin 11/2 p.31.

## Classification des rongeurs

par MIGNON J.\* et HARDOUIN J.

\*Unité de Zoologie générale et appliquée, FUSA, Gembloux (B)

Les lecteurs du Bulletin BEDIM semblent parfois avoir des difficultés avec la classification scientifique des animaux connus comme "rongeurs" dans le langage courant. Vu les querelles existant encore aujourd'hui dans la mise en place de cette classification, nous ne nous en étonnerons guère. La brève synthèse qui suit concerne les animaux faisant ou susceptibles de faire partie du mini-élevage. Ce résumé est notamment basé sur le livre N.A.S. Microlivestock, sur l'Encyclopédie Larousse du Monde animal (Mammifères) et sur le Guide Préliminaire de Reconnaissance des Rongeurs du Benin de de Visser, Mensah, Codjia et Bokonon-Ganta.

### Ordre des Rongeurs:

Mammifères caractérisés notamment par une paire d'incisives supérieures, une paire d'incisives inférieures et par l'absence de canines avec présence d'un espace vide entre les incisives et les molaires. La croissance des incisives est continue.

Les rongeurs représentent près de 40% des espèces de Mammifères. Sur base des caractéristiques anatomiques des muscles de la mâchoire, Carleton (1984) divise l'Ordre des Rongeurs en deux Sous-Ordres: les Sciurognathes (Sciuromorphes et Myomorphes) et les Hystricognathes (Hystricomorphes).

### Sous-Ordre des Sciurognathes

Famille des Sciuridés (tous les continents sauf l'Australie)

Ce sont les écureuils au sens large, avec présence d'une longue queue et un comportement fouisseur, arboricole ou terrestre.

- *Xerus erythropus*: écureuil fouisseur (erronément "rat palmiste"); striped ground squirrel

Famille des Anomaluridés (Afrique)

Écureuils volants dont la base de la queue est munie d'écailles cornées qui aideraient à grimper aux arbres, souvent présence d'un patagium (membrane étendue le long des flancs).

- *Anomalurus beecrofti*: écureuil volant de Beecroft; Beecroft's flying squirrel

- *Anomalurus derbianus*: écureuil volant de Derby; Lord Derby's flying squirrel

Famille des Cricétomyidés (Afrique)

Allure de rat, membres antérieurs (4 doigts) plus courts que les postérieurs (5 doigts), museau long et pointu, lèvre supérieure fendue, longue queue.

- *Cricetomys gambianus*: cricétome de Gambie (ex rat de Gambie); cricetoma (giant rat), giant pouched rat; cricetomo; erronément "rat palmiste"

- *Cricetomys eminii*: cricétome d'Emin, rat géant d'Emin; cricetoma, giant rat; cricetomo

### Sous-Ordre des Hystricognathes

Famille des Cavidés (monde entier)

Petite taille d'une vingtaine de centimètres, corps trapu, pattes courtes et queue courte ou nulle.

- *Cavia aperea*: cobaye sauvage (rare)

- *Cavia porcellus*: cobaye, cochon d'inde; guinea pig; cuy (espèce domestique, avec des variétés selon le pelage)

**Famille des Dolichotidés (Argentine et Patagonie)**

Allure de lièvre, longues pattes, surtout les postérieures, grosse tête au museau court.

- *Dolichotis patagonum*: lièvre de Patagonie, mara; mara, Patagonian cavy; mara

**Famille des Hystricidés (toutes les zones chaudes et tempérées sauf l'Australie et Madagascar)**

Aspect trapu, pattes très courtes munies de griffes robustes, manteau muni de piquants, déplacement lent.

- *Hystrix cristata*: porc-épic d'Afrique, porc-épic à crête; crested porcupine

- *Atherurus africanus*: athérure africain, faux porc-épic; African brush tailed porcupine

**Famille des Hydrochoéridés (principalement entre l'Argentine et le Panama)**

Comprend les plus gros rongeurs actuels, corps massif et lourd, tête assez grosse terminée par un large museau écrasé, les oreilles et les yeux semblent très petits, queue absente, bon plongeur et nageur.

- *Hydrochoerus hydrochaeris*: capybara, cochon d'eau, hydrochère; waterhog,; cabiai

**Famille des Dasyproctidés (Amérique centrale et Amérique du Sud)**

Allure de petites antilopes, membres longs, queue très courte.

- *Agouti paca* (= *Cuniculus paca*): paca; paca; tepezcuinte, lapa (esp.)

- *Agouti taczanowskii*: paca de montagne, mountain paca

(rem. fam. des Agoutidae)

**Famille des Capromyidés (Antilles, Amérique du Sud pour *Myocastor*)**

Tête lourde au museau plus ou moins effilé, pattes très robustes dont les doigts sont parfois réunis par une membrane, queue de longueur variable.

- *Capromys pilorides*: hutia de Cuba, hutia de forêt, rat pilori; Cuban hutia; hutia

- *Geocapromys brownii*: hutia de Jamaïque; Jamaican hutia

- *Myocastor coypus*: ragondin, myocastor, myopotame; coypus; nutria

**Famille des Thryonomyidés (Afrique, au sud de l'équateur)**

Pattes très petites par rapport à la taille du corps, quatre doigts munis de griffes très longues, fourrure dense et rugueuse, petits yeux et petites oreilles.

- *Thryonomys swinderianus*: rat des bambous, aulacode (erronément "agouti" en Afrique de l'Ouest), grand aulacode (erronément "hérisson" du Gabon); grass-cutter, cane rat, cutting-grass, ground-hog

**Famille des Chinchillidés (Amérique du Sud)**

Allure de lapin domestique avec une queue touffue plus développée et de plus petites oreilles, pattes postérieures plus longues que les antérieures, forte odeur.

- *Chinchilla lanigera*: chinchilla à longue queue; long-tailed chinchilla

- *Chinchilla brevicaudata*: chinchilla à queue courte; short-tailed chinchilla

**Summary : Rodents classification**

The note aims at providing the main characteristics of the principal families of rodents relevant to minilivestock.

## **NOVEDADES DE LA ASOCIACION**

### **Nueva Junta Directiva de BEDIM**

Durante el 6 de Mayo pasado, tuvo lugar en Gembloux, Bélgica, una Asamblea general extraordinaria, con el fin de elegir 5 nuevos administradores de la Junta Directiva (Consejo de Administración) de BEDIM: Los 5 candidatos propuestos fueron elegidos. De este modo, la composición del nuevo Consejo de Administración es la siguiente:

Jacques Hardouin, Presidente  
Eric Thys, Secretario  
Marie-José Desmet, Tesorera  
André Buldgen, Técnicas de producción  
Daou V. Joiris, Antropología cultural  
Ferran Jori, Producción en América Latina  
François Malaisse, Ecología y Biodiversidad  
Maurizio Paoletti, Nutrición Humana

Siguen las gestiones para encontrar alguna institución en Europa que quiera dar continuidad a BEDIM y reemplazar el papel del presidente en la animación de la asociación y la redacción del boletín. Se han contactado entre otros, Veterinarios Sin Fronteras de Bélgica y la Fundación Prince Laurent.  
La próxima Asamblea general tiene lugar el próximo 23 de Mayo de 2003.

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### **BEDIM en Español en la red!**

La página Web de BEDIM ha cambiado de dirección: Ahora se puede leer en [www.bib.fsaqx.ac.be/bedim](http://www.bib.fsaqx.ac.be/bedim)

La otra gran novedad es que ya puede leerse la versión de esta página en español. De este modo, damos la bienvenida a todos los lectores hispanos de Europa y América Latina, los cuales tendrán un portal de acceso mucho más cómodo y fácil sobre informaciones relativas a la asociación y a la minicria (Productos en venta, estatutos de la Asociación, coordenadas de contacto, especies de interés para BEDIM, etc...) .

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### **GUIAS TECNICAS DE PRODUCCION EN MINICRIA: SE BUSCAN CONTRIBUIDORES**

Las guías técnicas de producción, consisten en pequeños manuales técnicos que pretenden reunir información básica sobre la cría de pequeñas especies silvestres cuya producción ya está bien asentada. Algunos ejemplos de las mismas están accesibles en la página Web de BEDIM que aparecen en la misma bajo el título de "Guides pratiques d'élevage". Ya se han producido unos 8 ejemplares de estas, básicamente con especies africanas y europeas (ranas, caracoles, caracoles gigantes africanos y roedores africanos).

BEDIM solicita a aquellos investigadores o técnicos con experiencia en la cría de especies americanas (Iguanas, mariposas, capivara, pécaris, tortugas fluviales, *Dasyprocta* spp, paca, coypu, ranas tropicales, etc..) su participación en la elaboración de alguno de estos manuales técnicos en español, que sin duda pueden contribuir al difusión de la tecnología y a un mejor conocimiento sobre la cría de estas especies promisorias.

La estructura de la guía técnica puede ser la siguiente: 8 paginas en DIN A4 que deben tratar los siguientes aspectos: Pagina de cobertura, introducción sobre la minicria, generalidades sobre la especie, biología, principales características, técnicas de crianza, infraestructuras, patología, técnicas de empleo, direcciones útiles, bibliografía fundamental e informaciones sobre BEDIM.

Este boletín será impreso en versión papel y enviado a aquellos lectores de BEDIM que así lo soliciten a la Secretaria de BEDIM. Por otra parte, estará disponible en la pagina Web de BEDIM y puede ser citado como una publicación. Aquellos investigadores interesados en llevar a cabo una de estas publicaciones, se pueden poner en contacto con el Dr. Ferran Jori, representante de BEDIM para América Latina en la dirección: [jori@cirad.fr](mailto:jori@cirad.fr).

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## NOTICIAS-NOTICIAS-NOTICIAS-NOTICIAS-NOTICIAS-NOTICIAS-NOTICIAS

### PROYECTO SOBRE SISTEMAS DE CRIA DEL PECARI DE COLLAR (*Tayassu tajacu*) en LATINOAMERICA

El proyecto "Development of different production systems for the sustainable exploitation of the collared peccary (*Tayassu tajacu*) in Latin America" financiado por la Comisión Europea (2002-2005), entra en su segunda fase. La segunda reunión de coordinación del mismo tuvo lugar en el corazón de la Amazonia Peruana, gracias al gentileza de DICE (Durrell Institute of Conservation and Ecology, Universidad de Kent, Reino Unido) y Wildlife Conservation Society, que pusieron a disposición del consorcio del proyecto sus embarcaciones "Nutria" y "Lobo de Rio".

Durante la reunión, que duro 5 días, se pudo discutir sobre el avance de los diferentes experimentos relativos a la reproducción, alimentación, comportamiento y patología de este animal en cautividad que se llevan a cabo en Bahía (Brasil), Belem (Brasil) y Iquitos (Perú). También se analizo el estado de les investigaciones relativas a la ecología y manejo de poblaciones naturales que se desarrollan en Brasil.

En este proyecto participan instituciones de investigación europeas y latinoamericanas: CIRAD y MNHN(Francia), UAB(España), DICE (Reina Unido), UESC, UFPA y EMBRAPA (Brasil) y IVITA (Peru).

La pagina Web del proyecto ya puede ser visitada en la dirección siguiente): <http://antalya.uab.es/jcastella/index.htm>.

Esta pagina, sirve de plataforma de información sobre el proyecto así como también de base de datos interactiva y de intercambio de informaciones sobre la patología y la producción de estos animales en los diferentes centros experimentales de cría participantes del proyecto.

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## ASOCIACION DE CRIADORES DE FAUNA "L'IGUANE VERT", AMAZONIA FRANCESA

La Asociación "L'Iguane Vert" o Iguana Verde en español, es una iniciativa de algunos productores y personas interesadas en el fomento de la cría de especies silvestres amazónicas con finalidad comercial, existente en Guyana Francesa. Creada el 26 de Julio de 2001, esta asociación que recibe el apoyo e la Cámara Agrícola de Guyana Francesa, pretende desarrollar la promoción de la cría de *Iguana iguana*, *Dasyprocta spp.*, *Agouti paca*, *Hydrochaeris hydrochaeris*, *Tayassu tajacu* y *Tayassu pecari*.

Están interesados en el intercambio de información y experiencias con otros productores y asociaciones de América Latina. Su dirección es la siguiente:

Association L'IGUANE VERT  
Villa Elisé - Résidence Jari 97351 MATOURY  
Tel/Fax : 0594 25 02 45

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## COOPERACION BELGA Y BECAS DE ESTUDIO O PRATICAS

La cooperación belga concede becas de estudio o prácticas a ciudadanos de países en vías de desarrollo según criterios muy estrictos. Estas becas se otorgarán prioritariamente a personas especializadas en uno de los campos prioritarios de la cooperación belga antes citados.

Las peticiones de inscripción en universidades o escuelas de Bélgica debe realizarlas el propio candidato. Huelga decir que el conocimiento previo de la lengua de estudio es una condición indispensable (en general francés, inglés u holandés).

Para cualquier información sobre la cooperación belga y becas : [www.dgcd.be](http://www.dgcd.be)

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Dirección general de la Cooperación al Desarrollo

Dirección de información  
15 rue des Petits Carmes  
1000 Bruxelles (Bruselas, Bélgica)  
Dirección de correo electrónico:  
info.DGCD@diplobel.fed.be

## SURVEY OF THE LITERATURE

**BDB ref. :** Corresponds to the identification code of the document in the BEDIM DATA BASE.

### Human nutrition

**Cerda-Perez, H. –** Nutritional Composition, Small Scale Production and Palatability to Tourists of Palm Worm (Coleoptera : Cuculionidae) *Rhynchophorus palmarum*, a Traditional Food in Amazonas, Venezuela.

**Language :** English

**Source :** Antenna, 2000, 24, 3, 154-161.

**Address :** Department of Biology, Silwood Park, Ascot, Berkshire SL5 7PY.

**E-mail:** [h.cerda@ic.ac.uk](mailto:h.cerda@ic.ac.uk)

**Abstract :** Palm weevil larvae (=palm grub) are appreciated as delightful food and represent an important source of protein and fat. The research focused on nutritional composition of *R. palmarum*, small-scale low input production systems and palatability.

**BDB ref :** BEDIM 093

**Munyuli bin Mushambanyi, T. –** Etude préliminaire orientée vers la production des chenilles consommables par l'élevage des papillons (*Anaphe infracta* : Thaumetopoeidae) à Lwiro, Sud-Kivu. République Démocratique du Congo. [Preliminary Farming Study of Butterflies (*Anaphe infracta* : Thaumetopoeidae) for the Production of Consumable Caterpillars at Lwiro, South Kivu, Democratic Republic of Congo].

**Language :** French

**Source :** Tropicultura, 2000, 18, 4, 208-211.

**Address :** Laboratoire de Zoologie Agricole, Département de Biologie, Centre National de Recherche en Sciences Naturelles, CRSN/Lwiro, Bukavu, Kivu, République Démocratique du Congo. C/o Petit séminaire de Mugeru, B.P. 02 Cyangugu, Rwanda. Fax : 00871 762 056 981.

**E-mail :** [infobukavu@bushnet.net](mailto:infobukavu@bushnet.net)

**Abstract :** *Anaphe infracta* is one of the 3 wild butterfly species which produce every year in Lwiro region caterpillars consumed by local inhabitants. In captivity, it was observed that 56, 77 and 7 days respectively were required to reach the stage of larva, pupa and adult. The consumption index is over than 100. The mean weight gain in 49 days of caterpillar's feeding is 2.7 g for a 400 g total food consumed. *Bridelia micrantha*'s leaves were given to caterpillars every day as food. Under rearing conditions, this insect can reproduce itself. By farming more than 12 pairs of adult butterflies in a cage in nature, it is possible to harvest 9.32 kg of caterpillars.

**BDB ref. :** BEDIM 075

## edible and useful rodents

Tchoumboue, J.\*, Niba, A.T., Zango, P., Dafem, R. & Tégua, A. – Reproductive and Growth Performance of the Cricetoma (*Cricetomys gambianus*) under Captivity.

Language : English

Source : Tropicultura, 2002, 20, 3, 130-134.

Address\* : Faculty of Agronomy and Agricultural Sciences, University of Dschang, P.O.B. 222 Dschang, Cameroon.

Abstract : Studies were conducted on the reproductive and growth performance on the cricetoma (*Cricetomys gambianus*) under captivity in Dschang, Cameroon from January 1999 to March 2002. A total of 80 newborns recorded from 25 births of 28 giant rats (10 males and 18 females) were used in the study. No births were recorded for the heavy rainy season months (June, July and August) while the highest number of births were recorded in the dry season months of January, April and November to December. The age at sexual maturity for males and females was 7 and 7-8 months respectively. The gestation length, sex ratio (male/female), litter size and preweaning mortality were  $30.0 \pm 1.58$  d, 1.2/1,  $3.2 \pm 0.19$  and 42.50% respectively. There was a linear increase of the mean litter size with parity. Mismothering and cannibalism as causes of mortality amounted to more than half of the percentage of total causes while more than 80% of the mortalities recorded were in the first ten days of birth (stillbirth inclusive). The weaning and mature weights for males was significantly ( $P < 0.05$ ) higher than for females while no significant ( $P > 0.05$ ) differences were observed in the mean daily weight gains from birth to weaning and to 12 months of age. The results reveal that considerable improvements in productivity for these species could be achieved with a reduction in preweaning mortality.

BDB ref. : BEDIM

Jori, F.\*, Cooper, J.E. & Casal, J. – Postmortem findings in captive cane rats (*Thryonomys swinderianus*) in Gabon.

Language : English

Source : Veterinary Record, 2001, 148, 624-628.

Address : DVM, MSc, MRCVS, Programme ECONAP, CIRAD-EMVT, TA 30/F, Campus International de Baillarguet, 34398 Montpellier, Cedex 5, France. <ferron-jori@cirad.fr>

Abstract : The causes of morbidity and mortality in a population of cane rats (*Thryonomys swinderianus*) on an experimental farm in Gabon were monitored for 21 months. Twenty-eight per cent of the deaths occurred in preweaned kids, 42 per cent in subadults and 30 per cent in adults. The average monthly mortality was 2-5 per cent. Trauma was responsible for 29 of the deaths, 12 were due to septicaemia, 10 to primary respiratory lesions, no diagnosis could be reached in 28 cases out of 94 deaths.

BDD ref. : BEDIM 102

Jori, F.\*, Cooper, J.E. & Casal, J. – A survey of pathology on captive cane rats (*Thryonomys swinderianus*)

Language : English

Source : The Veterinary Record, 2001, 148, 624-628.

Address\* : CIRAD-EMVT, TA 30/F, Campus International de Baillarguet, 34398 Montpellier, Cedex 5, France. <[ferran-jori@cirad.fr](mailto:ferran-jori@cirad.fr)>

Abstract : Despite being increasingly reared in captivity in many African countries, data on diseases of farmed grasscutters (*Thryonomys swinderianus*) are scarce. This paper analyses causes of morbidity and mortality in a population of cane rats from an experimental farm in Gabon over a period of 21 months. A total of 94 necropsies was performed and complementary laboratory examinations were carried out in 36 cases in order to provide reference data on post-mortem lesions. The cumulated mortality of a total population of 546 animals was 15.4%. Monthly mortality averaged 2.5% during the period of the study and affected mainly subadult individuals (42%), preweaned and adult individuals representing 28% and 30% of the deaths respectively. The most frequent cause of death was non-infectious, trauma being responsible for more than 31% of deaths. Among pathological causes, 12% of the cases were found with septicaemia, 12% with primary respiratory lesions, 5% with gastro-intestinal disorders, 4% with reproductive problems and 3% with urinary lesions. In 29% of the cases, the diagnosis could not be ascertained. The study suggests that stress is an important predisposing factor to cane rat diseases. Moreover, it shows that causes of mortality in cane rats can vary according to geographic location, health status of the herd and management methods.

BDB ref. : BEDIM

Malekani, M.\*, Westlin, L.M., Paulus, J.J. & Potgieter, H.C. – Oestrous occurrence in captive female *Cricetomys gambianus* (Rodentia: Cricetidae).

Language : English

Source : J. Zool., Lond., 2002, 257, 295-301.

Address\* : Department of Biology, Faculty of Science, University of Kinshasa, P.O. Box 114, Kinshasa XI, Democratic Republic of Congo.

[bchmjm@puknet.puk.ac.za](mailto:bchmjm@puknet.puk.ac.za) or [jbahate@yahoo.fr](mailto:jbahate@yahoo.fr)

Abstract : *Cricetomys gambianus* is an important source of protein for human consumption in many parts of sub-Saharan Africa. Successful captive-breeding programmes require a better understanding of reproductive physiology and behaviour. Eight groups containing a total of 68 *C. gambianus* females were used to characterize the reproductive pattern. Oestrus appeared on average 1.3 times only in one female during 1 month, but its occurrence varied between 0.4 and two times in a month. The mean oestrus length was 3.3 days and ranged from 1.4 to 7.8 days. The average cycle length was 7.9 days but varied between 3 and 15 days. These results showed an irregular cycle pattern and revealed that *C. gambianus* may be an induced ovulator. Housing events, such as the presence or the absence

of a male and the type of cages or rearing room, and the dry and the rainy seasons did not seem to influence the cycle pattern in this species.

BDB ref. : BEDIM 069

Frederix, S. – Des rats pour sauver des vies humaines [Rats to save people's lives]

Language : French

Source : Dimension 3, 2002, 3, 7-9; Direction Générale de la Coopération Internationale.

Address : D.G.C.I., 15 rue des Petits-Carmes, B-1000 Bruxelles, Belgium. Info.dgci@diplobel.fed.be

Abstract : In the framework of the NGO project APOPO located in Morogoro (Tanzania), giant rats [*Cricetomys* apparently] have been trained within six months, by daily session of 20 minutes, to locate buried mines left after cease-fire. As compared to dogs already used, training and management of rats are much less expensive. The project centre has been located in Tanzania to test it in the field due to existing collaboration between the Agriculture University of Sokoine and the University of Antwerp (Belgium), although there are no mines left in Tanzania. It is foreseen to transport later trained rats where and when required.

BDB ref. : BEDIM 068

Porteous, I.S. & Pankhurst, S.J. – Social structure of the mara (*D. patagonum*) as a determinant of gastrointestinal parasitism.

Language : English

Source : Parasitology, 1998, 116, 269-275.

Address : Institute of Zoology, Zoological Society of London, Regent's Park, London NW1 4RY, UK.

Abstract : A study of gastrointestinal parasitism was conducted in a free-ranging population of captive maras (*Dolichotis patagonum*) in the UK. Trichostrongylid parasite loads were estimated from faecal egg counts. The results revealed a strong relationship between membership of social units and both the intensity and prevalence of infection. The mara has a social organization including both monogamy and communal denning of the young. This showed that family membership had a highly significant effect on the intensity of egg shedding in faeces and a significant effect on the prevalence of infection.

BDB ref. : BEDIM

Tapia Roman, M. – Guia para el manejo y cria del « Aguti », « picure », « guatusa » o « ñeque » *Dasyprocta punctata*, Gray y *D. fuliginosa*, Wagler [Guide for the management and breeding of the Agouti – *Dasyprocta punctata*, Gray and *D. fuliginosa*, Wagler]

Language : Spanish

Source : SECAB, Ciencia y Tecnologia n°64, 1997, 46 pp.

Address : Convenio Andrés Bello, CAB. Avenida 13 n° 85-60, A.A. 53465, Santa Fé de Bogota, Colombia. ISBN : 958-9089-30-5

**Abstract :** This is one of the few manuals on agouti (*Dasyprocta* spp.) breeding existing in Latin America, despite being a very much sought after rodent from which several experiments exist but very few are published. Very comprehensive and written in simple style to be used in rural extension program, this manual covers different topics concerning captive breeding technology of this valuable neotropical rodent. The manual deals with topics like general biology of the species, capture of wild stock, sexing and handling of the animals, and husbandry information such as facility designs, group management, reproduction, feeding, common diseases, culling and even a couple of recipes for cooking agouti meat.

**BDB ref. :** BEDIM

Jori, F. – La production de rongeurs en milieu tropical [Rodent production in the tropics]

**Language :** French

**Source :** Bois et Forêts des Tropiques, 2001, 269, 31-41.

**Address :** CIRAD/EMVT, TA 30/F Campus international de Baillarguet, 34398 Montpellier Cedex 5 France.

**Abstract :** The article reviews species with the highest production potential in Latin America and sub-Saharan Africa: *Thryonomys swinderianus*, *Hydrochoerus hydrochaeris*, *Cricetomys* spp., *Agouti paca*, *Dasyprocta* spp. Tables provide taxonomic positions, bush meat prices, reproduction parameters and some detailed information on the main species.

**BDB ref. :**

Edderai, D\*, Aran, A., Woringer, E. & Houben, P\*. – Résultats préliminaires sur l'immobilisation chimique de rongeurs africains: l'athérure (*Atherurus africanus*, Gray 1842) et le cricétome (*Cricetomys emini*, Waterhouse 1840). Etude portant sur quatre protocoles. [Preliminary Results on the Chemical Immobilization of African Rodents: the Brush-Tailed Porcupine (*Atherurus africanus*, Gray 1842) and Giant rat (*Cricetomys emini*, Waterhouse 1840). Study on Four Protocols]

**Language :** French

**Source :** Revue Elev. Méd. vét. Pays trop., 2001, 54, 2, 169-174.

**Address\* :** Projet DABAC, B.P. 9129, Libreville, Gabon.

Tél./fax : +241 76 04 22

E-mail : [dabac@assala.net](mailto:dabac@assala.net)

**Abstract :** The project DGEG (Game Farming Development in Gabon) aimed at establishing technical references on farming of wild species, among which are the brush-tailed porcupine (*Atherurus africanus*) and the giant rat (*Cricetomys emini*). The effects of four protocols with anesthetics were tested at various dose rates. Use of xylazine alone is not recommended in the brush-tailed porcupine. Results are provided.

**BDB ref. :** BEDIM 100

**Garcia, G.W.\***, Baptiste, Q.S., Adogwa, A.O., Kakuni, M., Arishima, K. & Makita, T. – The digestive system of the Agouti (*Dasyprocta leporina*) – Gross anatomy and histology.

**Language :** English

**Source :** Jpn. J. Zoo Wildl. Med., 2000, 5, 1, 55-66.

**Address\* :** The Open Tropical Forage-Animal Production Laboratory (OTFAPL), Department of Food Production; Faculty of Agriculture and Natural Sciences, The University of the West Indies, St. Augustine, Trinidad and Tobago, West Indies.

**Abstract :** Gross and morphometric studies were undertaken on 10 digestive tracts of the agouti (*Dasyprocta leporina*). The most prominent features included a long small intestine which formed 49.1% of the total weight of the entire digestive tract.

**BDB ref. :** BEDIM 101

**WILD PIGS**

**SELMI, AL, MENDES, GM; FIGUEIREDO, JP; GUIMARAES, FB; SELMI, GRB; BERNAL, FEM; MCMANNUS, C; PALUDO, GR: Chemical restraint of peccaries with tiletamine/zolazepam and xylazine or tiletamine/zolazepam and butorphanol.**

**Address : Faculdade de Agronomia e Medicina Veterinaria, Universidade de Brasilia, Campus Darcy Ribeiro, Caixa Postal 04508, Brasilia, Distrito Federal, CEP 70910-970, Brazil.**

**Source : Veterinary Anaesthesia and Analgesia; 2003, 30, 24-29**

**Language : English**

**Abstract : The use of a combination of tiletamine/zolazepam and xylazine (TZX) in collared and white-lipped peccaries and butorphanol (TZB) have been evaluated. At the doses described, TZB is effective in providing a long period of immobilization, whereas TZX is adequate for short to medium immobilization in white-lipped peccaries. Neither drug combination was effective in collared peccaries at the doses given.**

**DE VULLPILLIERES, B. : Wild suids and peccaries throughout the world : Protection, hunting, breeding an management.**

**Address : Fédération Nationale du Sanglier, 16 rue Claude Bernard, 75231 Paris cedex 05, France. E-mail : [pinet@inapg.inra.fr](mailto:pinet@inapg.inra.fr) ou [bentoutcourt@yahoo.fr](mailto:bentoutcourt@yahoo.fr)**

**Source : Mémoire de fin d'études, Institut National Agronomique de Paris-Grignon, 65 pages**

**Language : English**

**Abstract : This is a literature review concerning the biology and utilisation of wild pigs worldwide. The revision includes the 3 peccary species-white-lipped peccary, collared peccary and Chacoan peccary, African wild suiforms including the Red rive hog (*Potamochoerus porcus*), the Bushpig (*Potamochoerus larvatus*), the Warthog and the Giant Forest Hog (*Hylochoerus meinertzhageni*). Finally, the author reviews all members of the Asian wild pig family : Bearded pig (*Sus barbatus*), the javan warty pig (*Sus verrucosus*), the Visayan Warty pig (*Sus Cebifrons*), the Pigmy hog (*Sus salvanius*), and the Babirusa (*Babyrousa babyrousa*). Initially, the author provides general information on systematics and genetics and different ways of utilisation of those species (sport hunting, subsistence consumption, captive breeding). Further, the author gives detailed up to date information on biological data (place of life, feeding, reproduction...), and more specific data, about their protection status, their legislation in terms of hunting, and the success of their breeding in captivity.**

## BIRDS

Hien, O.C.\*, Boly, H., Brillard, J.P., Diarra, B. & Sawadogo, L. – Effets des mesures prophylactiques sur la productivité de la pintade locale (*Numida meleagris*) en zone sub-humide du Burkina Faso [Effects of Preventive Medical Treatments on the Productivity of Local Guinea-Fowl (*Numida meleagris*) in the Sub-Humid Region of Burkina Faso]

Language : French

Source : Tropicultura, 2002, 20, 1, 23-28.

Address\* : IN.E.R.A./Farakoba B.P. 910 Bobo-Dioulasso, Burkina Faso.

E-mail: [ollo-cherubin.hien@coraf.org](mailto:ollo-cherubin.hien@coraf.org)

Abstract : A study to measure the efficiency of preventive medical treatments on subsequent reproductive performances of local guinea fowl kept under natural photoperiod in the sub-humid region of Burkina Faso has been conducted. Two groups of 200 day-old guinea chicks each (T1 and T2) have been maintained under controlled conditions of feed, water allowance and more generally habitat (ex: temperature). T1 received no preventive medical treatment while Group T2 was vaccinated against Newcastle disease, and supplemented with a coccidiostatic and a trichomonacid. Percent mortality in T2 was significantly lower than in T1: 21% vs 43%. In both groups, the livability of chicks with hatching body weights < 25 g at birth was very low (26% and 28% survival in T1 and T2, respectively). No significant differences were observed for body weights between the two groups at 60 weeks of age irrespective of the sex. A comparison of laying rates observed during the entire laying period (May to October) indicated a significant difference between T2 and T1 (19 vs 13%, respectively). The onset of lay was observed at 219 days in T2 but only at 255 days in T1. A general tendency for heavier egg weights in T2 than in T1 was also observed (ex: 40.1 + 3.0 g in T2 vs 38.0 + 1.7 g in T1 at 52 weeks of age, respectively).

The results confirm observations by farmers that the overall reproductive performances of guinea fowl in Burkina Faso is generally very low. The prevention of diseases by a preventive programme improves laying rates and egg weights while significantly decreasing mortality in breeder flocks. The improvement of the average body weight and the laying rate over the season by improved feed, preventive treatments and, possibly, genetic selection of breeder flocks would be of major interest in this geographic portion of Africa.

BDB ref. : BEDIM 098

Ekué, M.R.M.\*, Mensah, G.A. & Codjia, J.T.C. – Technique de capture du francolin commun (*Francolinus bicalcaratus* Linnaeus, 1766) par usage du filet [Method to capture Double-spurred Francolins (*Francolinus bicalcaratus* Linnaeus, 1766) by Using a Net]

Language : French

Source : Tropicultura, 2002, 20, 1, 44-48.

- Address\*** : Aménagement et Gestion des Ressources Naturelles, Faculté des Sciences Agronomiques, Université d'Abomey-Calavi, 05 B.P. 993 Cotonou (Bénin)  
E-mail : [ekue1973@avu.org](mailto:ekue1973@avu.org) ou [ekuemr@yahoo.fr](mailto:ekuemr@yahoo.fr)
- Abstract** : A method to capture living and unharmed injuries double-spurred francolins (*Francolinus bicalcaratus*) is described. It consists of installing nets on a vegetation in which the signs of presence of francolins have been observed. Then, a beat is organized to orientate francolins in the nets direction. Francolins that are get in the nets cannot free themselves and have been recuperate by hunters. Regular transfer of captures making by a group of 61 hunters in 95 days have permit us to register 1981 francolins.
- BDB ref.** : BEDIM 099

## FROGS

Anholt, B.R.\* & Werner, E.E. – Predictable changes in predation mortality as a consequence of changes in food availability and predation risk.

Language : English

Source : Evolutionary Ecology, 1998, 12, 729-738.

Address\* : Department of Biology, University of Victoria, PO Box 3020, Victoria, British Columbia V8W 3N5, Canada.

Abstract : Theory predicts that animals will have lower activity levels when either the risk of predation is high or the availability of resources in the environment is high. An experiment tested whether predation mortality of larval wood frogs, *Rana sylvatica*, caused by a single larval dragonfly *Anax junius*, was affected by the presence of additional caged predators and elevated resource levels. The survival rate of the tadpoles increased when additional caged predators were present and when additional resources were provided.

BDB ref. : BEDIM 083

Lutz, C.G.\* & Avery, J.L. – Bullfrog culture.

Language : English

Source : Southern Regional Agriculture Center, Publ. 436, March 1999.

Address\* : Louisiana Cooperative Extension Service, Louisiana, USA.

Abstract : Up to 520 g of live food are required to produce a single 185 g bullfrog acceptable for marketing, but artificial diets must combine movement, texture and flavour. This means that production of live feed is necessary. In any artificial pond system, the most important day-to-day management is adequate sanitation. Fastest growing frogs should be selected for broodstock, and older breeders culled regularly and replaced by younger duly selected. Sex ratio of 1 male to 5 females is recommended. Breeders should be stocked at a density of 4 per m<sup>2</sup> in large open pens (at least 6m x 6m) constructed of fine mesh walls extending 1.5 m above ground level and 15 cm beneath the ground. Shade must be provided in each pen as well as "islands" surrounded by a pond or a network of canals. Terrestrial feed animals (crickets, worms, fly pupae, ...) can be provided on the ground or in small mangers, at a rate of 5-10% of the body weight per day. Eggs should be collected daily from the breeding pen and transported to the hatchery. Around 21 days after hatching, tadpoles should be transferred to tadpole culture ponds. Culture growing pens (10 to 100 m<sup>2</sup>) can be stocked at up to 50 frogs/m<sup>2</sup>.

BDB ref. : BEDIM 079

Izquierdo, J., Nogales, F.\* & Yáñez, A.P. – Análisis herpetofaunístico de un bosque húmedo tropical en la Amazonía Ecuatoriana [Herpetofaunistic analysis in a tropical rain forest from Ecuadorean Amazon region]

Language : Spanish

Source : Ecotropicos, 2000, 13, 1, 29-42.

**Address\*** : Universidad Central del Ecuador, Fac. de Filosofía: Escuela de Biología, Avenida América y La Gasca. Quito, Ecuador.  
E-mail : [fmadrid@wacom.net.ec](mailto:fmadrid@wacom.net.ec)

**Abstract** : This work presents data about richness in reptiles and amphibians for several habitats in a Tropical Rain Forest in Ecuador. The research is given as an example to evaluate herpetofaunistic changes in time in tropical rain forests.

**BDB ref.** : BEDIM 077

**Ehmann, H. – Microbranding** : a low impact permanent marking technique for small reptiles and frogs as an alternative to toe clipping.

**Language** : English

**Source** : ANZCCART News, June 2000, 13, 2, 6-7.

**Address** : Dep. Applied and Molecular Ecology, Univ. Adelaide, Australia.  
E-mail: [wildworks@bigpond.com](mailto:wildworks@bigpond.com)

**Abstract** : Microbranding minimises pain and stress as there is no blood loss and can be used easily in the field. Propane gas small tank is dangerous and 12-volt rechargeable gelcell becomes quickly flat. The author finally set up a tool made of an electrically heated nichrome wire-tip rather similar to medical diathermy units. Power is supplied from a 6 volt rechargeable torch. Numbers are branded according to conventional places of the body, each having a given value (units, tens, hundreds, ...) and the number being the addition of all the microbrands (ex: 683 = 400 + 200 + 70 + 10 + 2 + 1).

**BDB ref.** : BEDIM 078

**Veradino De Stéfani, M.\*, Sacioto Marcantonio, A. & Laterça Martins, M. – Suplementação com vitamina C e E sobre o desenvolvimento e sobrevivência de girinos de rã-touro (*Rana catesbeiana* Shaw, 1802) [Vitamin C and E supplementation on the development and survival of bullfrog tadpoles (*Rana catesbeiana* Shaw, 1802)].**

**Language** : Portuguese

**Source** : Ciência Rural, Santa Maria, 2001, 31, 5, 869-871.

**Address\*** : Docente do Centro de Aquicultura da Universidade Estadual Paulista (UNESP), Via de Acesso. Prof. Paulo D. Castellane, Zona Rural, s/n, 14884-900, Jaboticabal, SP Brazil.  
E-mail: [martavs@fcav.unesp.br](mailto:martavs@fcav.unesp.br)

**Abstract** : The effects of vitamin C and E supplementation on the development and survival of bullfrog tadpoles were evaluated. The animals received 50, 250 and 500mg vitamin C or E/kg dry ration. In the control diet, vitamins were not added. A fully randomized experimental design was utilized, with 3 replicates of each treatment. Vitamin supplemented tadpoles did not show significant difference on growth compared to the control. Furthermore, tadpoles with supplementation of 500mg vitamin C showed better survival (62.83%) than control (40.48%; p<0.05). The other levels of vitamin C and E did not affect the survival of tadpoles. The present study suggests that 500mg vitamin C/kg dry ration is a tool to improve the survival of bullfrog tadpoles.

**BDB ref.** : BEDIM 080

Shehata, A. & Abdel Mohsen, M.A. – Morphological study of red blood cells as a tool for animal species identification.

Language : English

Source : Assiut Veterinary Medical Journal, 2001, 45, 89, 326-335.

Address : Dept. of Forensic Medicine & Toxicology, Fac. Vet. Med., Assiut University, Assiut, Egypt.

Abstract : The present study recorded the different morphological measurements of red blood cells in different mammals, birds, fish and amphibian as a tool for identification.

BDB ref. : BEDIM 081

Prapree Sretarugsa\*, Pornchai Luangborisut, Maleeya Kruatrachue & E. Suchart Upatham – Effects of diet with various protein concentrations on growth, survival and metamorphosis of *Rana tigerina* and *R. catesbeiana*.

Language : English

Source : J. Sci. Soc. Thailand, 1997, 23, 209-224.

Address\* : Department of Anatomy, Faculty of Science, Mahidol University, Bangkok 10400 Thailand.

Abstract : Culture of *Rana tigerina* and *R. catesbeiana* was carried out. The objective of this investigation is to study the effects of diets varying in protein concentrations on frogs at various stages. Tadpoles were fed with diets containing 35%, 39%, 43% and 47% protein while froglets were fed with diets containing 21%, 25%, 29% and 33% protein. Both *R. tigerina* and *R. catesbeiana* tadpoles fed with diet containing 35% protein concentration achieved the best results with regard to feed conversion (2.00 in both species of frogs). For froglets, diets containing 21-33% protein resulted in relatively similar feed conversion values (2.3-2.5 in *R. tigerina*; 1.7-1.9 in *R. catesbeiana*).

BDB ref. : BEDIM 082

## EDIBLE TROPICAL SNAILS

**Nobime, V. – Elevage d'escargots géants au Bénin [Giant snails breeding in Benin]**

**Language :** French

**Source :** CREDAC-FAH, 2002, 38p.

**Address :** Centre de Recherche et de Diffusion des Achatines (Ferme Agro-Hélicicole). B.P. 20 Godomey, Bénin.

E-mail: [livredac@recherche.fr](mailto:livredac@recherche.fr)

**Abstract :** This booklet with many very clear drawings has been produced by the NGO „Lilinc Benin“ as a technical manual. It aims at helping giant snails producers, extensionists, technicians ... to produce more achatines to meet the very high demand identified (100 tons/year), requiring more than 150 breeding units. CREDAC has set up a snail production unit model able to produce  $\pm$  500 kg liveweight snails per year. Appropriate training has been organized accordingly for 240 women over a 2 \_ months period.

The document is very well documented and provides the information in a very simple language on the different species, mating, eggs laying, infrastructure, production capacity, maintenance, feeding, diseases ... but also cost of production, required surface, nutritive value and recipe ...

The booklet is available on sale for FCFA TTC 5,000 payable by International Money Order (post office) to the author Victor Nobime or by bank transfer to LILINC-ONG account 01380109210 Diamondbank, Benin.

**BDB ref. :** BEDIM

**Codjia, J.T.C. & Noumonvi, R.G.C. – Guide technique d'élevage d'escargots géants africains [Technical Guide for Breeding African Giant Snails]**

**Language :** French

**Source :** Produced jointly by :

CECODI (Centre International d'Ecodéveloppement Intégré, ONG, 01BP2759 Cotonou-Bénin - E-mail : [ccodjia@avu.org](mailto:ccodjia@avu.org), CBDD (Centre Béninois pour le Développement Durable), VeCO (De Vredeseilanden, Belgian NGO), Belgian Survival Fund, SNV (Dutch Organization for Development).

November 2001, format 15 x 21 cm, 52 pages, 23 plates

**Address :** Distribution CECODI Price : 2.500 FCFA inside Benin, or 3.500 CFA outside Benin (mailing costs included).

**Abstract :** This booklet is written in a very simple style with nice drawings and provides all what is required to launch breeding local snails. Basic information on the existing species, their life in the wild, their uses but also equipment, infrastructure, feeding, ... as well as a tentative cost price scheme. The guide is an excellent document to be recommended.

**BDB ref. :** BEDIM 085

**Ekoué, S.\* & Kuevi-Akue, K. – Enquête sur la consommation, la répartition et l'élevage des escargots géants au Togo [Investigations on Consumption, Distribution and Breeding of Giants Snails in Togo]**

**Language :** French

**Source :** Tropicultura, 2002, 20, 1, 17-22.

**Address\* :** Chef de Section Elevages Spéciaux, Institut National Zootechnique et Vétérinaire (INZV).

**Abstract :** A subcontracting convention has been signed between the « Programme National Petit Elevage » and the « Institut National Zootechnique et Vétérinaire » which permitted to investigate African giant snail consumption, distribution and breeding in South Togo. Hundred fifty questionnaires were given to sellers during market days, but only fourteen to breeders. The methodology used was based on rapid rural appraisal and direct interrogation on four species of giant snails (*Archachatina archachatina*, *Archachatina degneri*, *Achatina achatina*, *Achatina fulica*).

For the consumption about 80% of the samples (sellers and breeders) confirmed that there is no difference in taste between species. The estimation of giant snails gathered per year is about 30 tons and 80% of the sellers said that they got profit from this activity. For the constraints of giant snails breeding were noticed lack of extension, high level of mortalities of young snails, red ant problem and lack of training and information. Giant snail breeding in Togo will be developed if solutions are found to the constraints.

**BDB ref. :** BEDIM 096

**Sodjinou, E.\*, Biaou, G. & Codjia, J.-C. – Caractérisation du marché des escargots géants africains (achatines) dans les départements de l'Atlantique et du Littoral au Sud-Bénin [Characterisation of African Giant Snails Market in Atlantique and Littoral Regions in South-Benin]**

**Language :** French

**Source :** Tropicultura, 2002, 20, 2, 83-88.

**Address\* :** B.P. 154 Ab-Calavi (Rép. Bénin) - E-mail: [esodjinou@avu.org](mailto:esodjinou@avu.org)

**Abstract :** The African giant snail is an animal which's meat is very appreciated by all social categories, in countryside as well as urban surroundings, at the same title the grass-cutter and the chicken. But this meat is a lot more consumed by the rich compared to the poorest layers. The most frequent consumption shapes are: fried, smoked, buttered and short-bubbled. The national supply of African giant snails is determined by several factors of which rhythms of rains, geographical concentration of gatherers and socio-economic factors like costs of opportunity for the gatherer. The supply of African giant snail's meat is believed to be about 62.5 tons per year, at Cotonou. This supply is complemented by imports of European (*Helicidae*) snail meat from France. A chart of the processing systems and two tables are provided.

**BDB ref. :** BEDIM 097

Dupont-Nivet, M., Mallard, J., Bonnet, J.C. & Blanc, J.M. – Snail breeding and quantitative genetics.

Language : English

Source : Proceed. 7WCGALP Montpellier – France 2002 ; Communic. 07-08.

Address : INRA, Laboratoire de Génétique des Poissons, 78352 Jouy en Josas Cedex, France.

Abstract : This paper reports most important results from experiments carried out since 1993. They aimed at estimating genetic parameters for main traits describing growth and reproduction, and at testing the efficiency of an individual selection for increasing adult weight. Species studied is *Helix aspersa aspersa*. Results showed that growth traits (adult age and adult weight) are highly heritable ( $h^2=0.51$  and  $0.38$  respectively for adult weight and adult age). Adult weight can be quickly improved (+ 11% of control mean per generation). Number of eggs per clutch and mean egg weight are genetically correlated to adult weight as shown by the genetic correlations estimated and by the correlated responses to selection.

BDB ref. : BEDIM

Awah, A.A., Obehi Edeogbon, C., Lalabe, B.C. & Omo-Erigbe, P. – Snail Farming in Mature Rubber Plantation: 4. Studies on some Artificial Methods for Hatching of Snail Eggs and Protection of Young Snails during the Dry Season.

Language : English

Source : Tropicultura, 2001, 19, 4, 194-198.

Address : Rubber Research Institute of Nigeria, P.M.B. 1049, Benin-City, Nigeria.

Abstract : Three species of edible land snails of the moist forest belt of Nigeria, *Archachatina marginata*, *Archachatina papyracea* and two phenotypes of *Limicolaria* species, sometimes named *Limicolaria flammae* and *Limicolaria aurora* were used in the study. The results of egg laying performance by the three species of snails showed a significantly higher population explosion in a given breeding season for *L. flammae/aurora* than for either *A. papyracea* or *A. marginata*. The results of artificial methods for hatching of snail eggs indicated that the use of plastic containers, plus either loose topsoil or cotton wool for the incubator mediums or the use of cellophane containers (bag) plus loose topsoil for the incubator medium, were in each case suitable for adoption in successful hatching of snail eggs artificially.

Leaking coagulation pans or wooden boxes, half filled with heat sterilized loose topsoil and placed on the ground under shade of rubber tree canopy as dry season protection methods for the snails, were again in each case effective in the reduction of field mortality of the young snails. The survival rates were 100%, 90.6% and 71.2% for youngs of *A. marginata*, *A. papyracea* and *L. flammae/aurora* respectively. The results further indicated that the dry season protection method deemed optimum for the youngs of *A. marginata* may not necessarily be optimum for the youngs of either *A. papyracea* or *L. flammae/aurora*.

BDB ref. : BEDIM 095

**Duah, O.A. & Monney, K.A. – Population density estimation and feeding ecology of the giant snail *Achatina achatina* in a forest reserve.**

**Language : English**

**Source : Afr. J. Ecol., 37, 366-368.**

**Address : Department of Zoology, University of Cape Coast, Cape Coast, Ghana.**

**Abstract : Over-exploitation of natural populations of giant African snails is now evident. The paper provides results of a study on population density and activities of *Achatina achatina* in a Forest Reserve, Western Region, Ghana. Today most of the snails found are juveniles and medium-sized cohorts. It seems that a catch of 500 juveniles requires now 12h which in the past was made in 2 h. Techniques to rear local snails exist. Training people in a right way becomes very important for the conservation of *A. achatina* locally.**

**BDB ref. : BEDIM 094**

## MANURE WORMS

Saint-Denis, M., Narbonne, J.F., Arnaud, C., Thybaud, E. & Ribera, D. – Biochemical responses of the earthworm *Eisenia fetida andrei* exposed to contaminated artificial soil effects of benzo(a)pyrene.

Language : English

Source : Soil Biology and Chemistry, 1999, 31, 1837-1846.

Address : Laboratoire de Physico-Toxico-Chimie des Systèmes Naturels (LPTC), UPRES A 5472 CNRS, ISTAB, avenue des Facultés, F-33405 Talence Cedex, France.

Abstract : The effects of benzo(a)pyrene at different concentrations and exposure times were investigated on the biochemical responses of the earthworm *Eisenia fetida andrei* to elucidate the mechanisms of action and explore the potential for using this response as biomarkers.

BDB ref. : BEDIM 073

Ribera, D. & Saint-Denis, M. – Le ver *Eisenia fetida* : intérêts et perspectives en écotoxicologie terrestre [The worm *Eisenia fetida* : interests and perspectives in terrestrial ecotoxicology]

Language : French

Source : Bulletin de la Société Zoologique de France, 1999, 124, 4, 411-420.

Address : ADEC Tox, 120, rue Quintin, F-33000 Bordeaux, France.

Abstract : Laboratory and field experiments indicate that the response depends on the amount administered and on the duration of exposure.

BDB ref. : BEDIM 070

Arnaud, C., Saint-Denis, M., Narbonne, J.F., Soler, P. & Ribera, D.\* – Influences of different standardised test methods on biochemical responses in the earthworm *Eisenia fetida andrei*.

Language : English

Source : Soil Biology & Biochemistry, 2000, 32, 67-73.

Address\* : ADEC Tox, 120, rue Quintin, F-33000 Bordeaux, France.

Abstract : Studies were carried out to determine the effects on the metabolic activities of earthworms of experimental conditions used in toxicity assays. Earthworms (*Eisenia fetida andrei*) were maintained under constant environmental conditions, in the absence of toxic agents, using three standard toxicology assay procedures (the artisol, contact filter paper and artificial soil tests) for two periods of times. Great care must therefore be taken when comparing results from different ecotoxicological assay procedures.

BDB ref. : BEDIM 072

Blakemore, R.J. – Ecology of Earthworms under the « Haughley Experiment » of Organic and Conventional Management Regimes.

Language : English

Source : Biol. Agric. and Hortic., 2000, 18, 141-159.

Address : P.O. Box 414, Kippax, ACT 2615, Australia.

E-mail: [robblakemore@bigpond.com](mailto:robblakemore@bigpond.com)

- Abstract** : The author compares the effects of worms on arable soils on a farm at Haughley, Suffolk U.K. The paper has some interest for the minilivestock sector as it deals with *Lumbricus terrestris* indeed, but also with *Allolobophora chlorotica*, *Aporrectodea caliginosa*, *Ap. rosea*, *Ap. longa* and *Ap. nocturna*.
- BDB ref.** : BEDIM 071

## CULTURAL ANTHROPOLOGY

Bonaudo T., Le Pendu Y, Chardonnet P., Jori F - Chasse de subsistance sur un front pionnier amazonien : le cas d'Uruarà [Subsistence Hunting on a Pioneer Front of Amazonia : Case of Uruarà]

Language : French

Source : Revue Elev. Méd. Vét. Pays trop., 2001, 54 (3-4) : 281 – 286.

Address : CIRAD-tera, TA 60/15, 73 rue J. F. Breton, F-34398 Montpellier Cedex 5, France

E-mail : [b\\_thierry@yahoo.com](mailto:b_thierry@yahoo.com); [bonaudo\\_t@urunet.com.br](mailto:bonaudo_t@urunet.com.br)

Abstract : Although prohibited, hunting is widely practiced by rural populations settled along the Transamazon Highway in the Uruarà district of Brazil. Hunters kept their movements within five kilometres at most from their homes. The number of species caught was low : pacas (*Agouti paca*), deer (*Mazama* sp.) collared peccaries (*Tayassu tajacu*) provided more than 70% of game meat. In addition to social and ludic roles, hunting had a real nutritional value. Mean daily game meat consumption ranged from 36 to 45.9 g per person. Game hunting did not seem to be the main factor for loss of biodiversity. Community management of wildlife and development of new activities such as breeding of wild animals could help reserve natural resources.

BDB ref. : BEDIM 074

## **MINILIVESTOCK**

**Paoletti\* M.G. and Dufour D.L. – Minilivestock**

**Language :** English

**Source :** Encyclopedia of Pest Management, in D. Pimentel, M. Dekker Inc, NY, 2002, 487-492

**Address :** \*Dip. Biologia, Univ. Padova, via U. Bassi 58b, I-35121 Padova, Italy [paoletti@civ.bio.unipd.it](mailto:paoletti@civ.bio.unipd.it)

**Abstract :** These 6 pages with 14 pictures in a large Encyclopedia summarize very well the situation of invertebrates within minilivestock. Not only edible insects but also molluscs, earthworms... are dealt with as food. Nutritional values are given, as well as compared foraging efficiency of some earthworms, insects, fish and game in Amazonian countries.

**BDB ref. :** BEDIM 086

**Bengis R.G. – Les maladies infectieuses des animaux sauvages : détection, diagnostic et gestion**

**Source :** Revue scientifique et technique, (O.I.E.), 2002, 21, 1 (210p) +2 (194p)

**Language :** French

**Address :** Office international des épizooties, 12, rue de Prony, F- 75017 Paris, France – [pub.sales@oie.int](mailto:pub.sales@oie.int) - <http://www.oie.int/fr>.

**Abstract :** This issue of the “Revue Scientifique et Technique de l’O.I.E.” is devoted to infectious diseases of wild fauna. International rules, economic values, conservation, movements of animals... are examined as well as problems in wild animals breeding. The issue is on sale for 90 ₺.

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