Bulletin of the
British Ornithologists' Club

Volume 131  No. 4
December 2011
FORTHCOMING MEETINGS

See also BOC website: http://www.boc-online.org

MEETINGS are open to all, not just BOC members and are free.

Evening meetings are in Tower Rooms, Section A, Sherfield Building, Imperial College, South Kensington, London, SW7 2AZ. The entrance is opposite the Queen’s Tower in the main quadrangle. The nearest Tube station is at South Kensington. For maps, see: http://www3.imperial.ac.uk/campusinfo/southkensington

27 March 2012 at 6.00 pm—Julian Greenwood—A long-term study of the Black Guillemot colony at Bangor, Co. Down

Abstract: The talk will look at the history of Black Guillemots Cepphus grylle nesting in Bangor, Co. Down, and the patterns revealed by this long-term study. Results demonstrate that an advance in timing of breeding is associated with temperature rise in seawater and hence can be related to climate change. Evidence is also gathering to show that Black Guillemots don’t always play ‘happy families’, with both site and mate unfaithfulness occurring. Ringing recoveries have revealed the dispersal patterns of young birds around the Irish coastline.

Biography: Julian Greenwood is co-ordinator of science with education at Stranmillis University College, Belfast, teaching on BEd, PGCE, MEd and lifelong-learning programmes. He has had a lifelong interest in natural history, particularly birds, and for over 25 years has been working on Black Guillemots in Northern Ireland. He presently serves on RSPB Council.

The evening will commence with the talk beginning at 6.00 pm. After the talk the cash bar will open so that attendees can socialise. At approximately 7.30 there will be a light buffet supper (sandwiches etc.) costing £15 per person for those who have ordered it at least two weeks in advance. Vegetarian and gluten-free options will be available for those who have requested them when booking.

Those wishing to order the buffet supper should apply to the Chairman (address below) by 13 March 2012.

There is no charge to attend the talk but to comply with Imperial College requirements those wishing to attend must notify the Chairman no later than Monday 26 March 2012.

12 June 2012 at 5.15 pm—Annual General Meeting; 5.40 pm—Special General Meeting

6.00 pm short talks—if you wish to give a talk, which should last 10–15 minutes, please send details to Robert Prys-Jones (e-mail: r.prys-jones@ihm.ac.uk) no later than 15 January 2012.

Those wishing to order the buffet supper should apply to the Chairman (address below) by 29 May 2012.

To comply with Imperial College Requirements, those wishing to attend the talks must notify the Chairman no later than Monday 11 June 2012.

18 September—details to be announced

Those wishing to order the buffet supper should apply to the Chairman (address below) by 4 September 2012.

To comply with Imperial College requirements, those wishing to attend the talk must notify the Chairman no later than Monday 17 September 2012.

The Chairman: Helen Baker, 60 Townfield, Rickmansworth, Herts. WD3 7DD, UK. Tel: +44 (0)1923 772441. E-mail: helen.baker6@tiscali.co.uk
CLUB ANNOUNCEMENTS

Chairman’s message
The Club’s current Rules, which date from 2000, need updating. Rule 40 permits us to do this. The Charity Commission produced a new model constitution for Charitable Associations in November 2007 and the new draft Rules, based on that model, appear below. Rule 26 permits the Club to make Bye-laws which can be amended at an AGM and which do not need to be approved by the Charity Commission. We have made use of this provision. The draft Rules and Bye-laws will be the subject of a Special General meeting which will follow the AGM on 12 June 2012. If adopted, the Rules will then be submitted to the Charity Commission for approval.

Helen Baker

The following is the full text of the Rules which the Club proposes to adopt.

RULES OF THE BRITISH ORNITHOLOGISTS’ CLUB (Registered Charity No 279583) (‘the Club’)

Adopted on the ..................

PART 1

1. Adoption of the Rules
The Club will be administered and managed in accordance with the provisions in parts 1 and 2 of these Rules.

2. The Name
The Club’s name is the British Ornithologists’ Club.

3. The Objects
The Club’s objects are to promote scientific discussion between members and others interested in ornithology and to facilitate the dissemination of scientific information concerned with ornithology. The Club shall maintain its special interest in avian systematics, taxonomy and distribution.

4. Application of the Income and Property
(1) The income and property of the Club shall be applied solely towards the promotion of the Objects.
(2) A Trustee may pay out of, or be reimbursed from, the property of the Club reasonable expenses properly incurred by him or her when acting on behalf of the Club.
(3) None of the income or property of the Club may be paid or transferred directly or indirectly by way of dividend, bonus or otherwise by way of profit to any member of the Club. This does not prevent:
   (a) a member who is not also a Trustee from receiving reasonable and proper remuneration for any goods or services supplied to the Club;
   (b) a Trustee from buying goods or services from the Club upon the same terms as other members or members of the public;
   (c) the purchase of indemnity insurance for the Trustees against any liability that by virtue of any rule of law would otherwise attach to a Trustee or other officer in respect of any negligence, default, breach of duty or breach of trust of which he or she may be guilty in relation to the Club but excluding:
      i. fines;
      ii. costs of unsuccessfully defending criminal prosecutions for offences arising out of fraud, dishonesty or wilful or reckless misconduct of the Trustee or other officer;
      iii. liabilities to the Club that result from conduct that the Trustee or other officer knew or ought to have known was not in the best interests of the Club or in respect of which the person concerned did not care whether that conduct was in the best interests of the Club or not.
No Trustee may be paid or receive any other benefit for being a Trustee.

In this Clause 4, 'Trustee' shall include any person, firm or company connected with the Trustee.

5. Dissolution
(1) If the members resolve to dissolve the Club the Trustees will remain in office as Club Trustees and be responsible for winding up the affairs of the Club in accordance with this clause.
(2) The Trustees must collect in all the assets of the Club and must pay or make provision for all the liabilities of the Club.
(3) The Trustees must apply any remaining property or money:
(a) directly for the Objects;
(b) by transfer to any Charity or charities for purposes the same as or similar to those of the Club;
(c) in such other manner as the Charity Commission for England and Wales ('the Commission') may approve in writing in advance.
(4) The members may pass a resolution before or at the same time as the resolution dissolving the Club specifying the manner in which the Trustees are to apply the remaining property or assets of the Club and the Trustees must comply with the resolution if it is consistent with paragraphs (a)–(c) inclusive in sub-clause (3) above.
(5) In no circumstances shall the net assets of the Club be paid to or distributed amongst the members of the Club.
(6) The Trustees must notify the Commission promptly that the Club has been dissolved. If the Trustees are obliged to send the Club’s accounts to the Commission for the accounting period which ended before its dissolution, they must send the Commission the Club’s final accounts.

6. Amendments
(1) The Club may amend any provision in Part 1 of these Rules provided that:
(a) no amendment may be made that would have the effect of making the Club cease to be a Charity at law;
(b) no amendment may be made to alter the Objects if the change would not be within the reasonable contemplation of the members or donors of the Club;
(c) no amendment may be made to clause 4 without the prior written consent of the Commission;
(d) any resolution to amend a provision of Part 1 of these Rules is passed by not less than two-thirds of the members present and voting at a general meeting.
(2) Any provision contained in Part 2 of these Rules may be amended, provided that any such amendment is made by resolution passed by a simple majority of members present and voting at a general meeting.
(3) A copy of any resolution amending these Rules shall be sent to the Commission within 21 days of its being passed.

PART 2

7. Membership
(1) Membership is open to individuals over 18 who are approved by the Trustees;
(2) An individual may become a member on payment of the appropriate annual subscription and subject to confirmation by the Trustees at their next meeting.
(3) Membership is not transferable to anyone else.
(4) The Trustees must keep a register of names and addresses of the members which must be made available to any member upon request.

8. Termination of Membership
(1) Membership is terminated if:
(a) the member dies;
(b) the member resigns by written notice to the Club unless, after the resignation, there would be fewer than two members;
(c) the member is removed from membership by a resolution of the Trustees that it is in the best interests of the Club that his or her membership is terminated. A resolution to remove a member from membership may only be passed if:
(d) the member has been given at least 21 days' notice in writing of the meeting of the Trustees at which the resolution will be proposed and the reasons why it is proposed;
(e) the member or, at the option of the member, the member’s representative (who need not be a member of the Club) has been allowed to make representations to the meeting.
(2) The Trustees shall be entitled to terminate the membership of any member whose subscription has not been paid within six months of falling due, provided that such member has been given written notice calling for payment of the subscription, and that the notice has not been complied with within one month of its date.
9. General Meetings
(1) An Annual General Meeting must be held not later than 30 June every year on a date to be fixed by the Trustees.
(2) All general meetings other than Annual General Meetings shall be called Special General Meetings.
(3) The Trustees may call a Special General Meeting at any time.
(4) The Trustees must call a Special General Meeting if requested to do so in writing by at least ten members or one-tenth of the membership, whichever is the greater. The request must state the nature of the business that is to be discussed. If the Trustees fail to hold the meeting within 28 days of the request, the members may proceed to call a special general meeting but in doing so must comply with the provisions of these Rules.

10. Notice
(1) The minimum period of notice required to hold any general meeting of the Club is 21 clear days from the date on which the notice is deemed to have been given.
(2) The notice must specify the date, time and place of the meeting and the general nature of the business to be transacted. If the meeting is to be an Annual General Meeting, the notice must say so.
(3) The notice must be given to all members and to the Trustees.

11. Quorum
(1) No business shall be transacted at any general meeting unless a quorum is present.
(2) A quorum is ten members entitled to vote upon the business to be conducted at the meeting.
(3) If no quorum is present at the meeting within 15 minutes of the time specified for the start of the meeting the members present at that time shall constitute the quorum for that meeting.

12. Chair
(1) General meetings shall be chaired by the person who has been elected as Chair.
(2) If there is no such person or he or she is not present within 15 minutes of the time appointed for the meeting it shall be chaired by the person who has been elected as Vice-Chair.
(3) If there is no such person or he or she is not present within 15 minutes of the time appointed for the meeting, a Trustee nominated by the Trustees shall chair the meeting.
(4) If there is only one Trustee present and willing to act, he or she shall chair the meeting.
(5) If no Trustee is present and willing to chair the meeting within 15 minutes after the time appointed for holding it, the members present and entitled to vote must choose one of their number to chair the meeting.

13. Votes
(1) Each member shall have one vote but if there is an equality of votes the person who is chairing the meeting shall have a casting vote in addition to any other vote he or she may have.
(2) A resolution in writing signed by each member who would have been entitled to vote upon it had it been proposed at a general meeting shall be effective. It may comprise several copies each signed by one or more members.

14. Officers and Trustees
(1) The Club and its property shall be managed and administered by a committee comprising the Officers and other members elected in accordance with these Rules. The Officers and other members of the committee shall be the Trustees of the Club and in these Rules are together called ‘the Trustees’.
(2) The Club shall have the following Officers:
   • A Chair
   • A Vice-Chair
   • An Honorary Secretary
   • An Honorary Treasurer.
(3) A Trustee must be a member of the Club.
(4) No one may be appointed a Trustee if he or she would be disqualified from acting under the provisions of Rule 17.
(5) In addition to the four Officers there shall be not less than three and not more than five other Trustees.
(6) A Trustee may not appoint anyone to act on his or her behalf at meetings of the Trustees.

15. The Appointment of Trustees
(1) The Club in general meeting shall elect the Officers and the other Trustees.
(2) The Trustees may nominate any person who is willing to act as a Trustee. Subject to sub-clause (5)(b) of this rule, they may also nominate Trustees to act as officers.
(3) Any member wishing to nominate a candidate shall forward the nomination to the Honorary Secretary in writing signed by the nominating Member and five other members, with confirmation that the candidate has agreed to be nominated. To be valid, such a nomination shall reach the Honorary Secretary no later than 31 January preceding the Annual General Meeting.
Each Trustee shall retire with effect from the conclusion of the fourth Annual General Meeting after his or her appointment and with the exception of the Honorary Secretary and Honorary Treasurer, shall not be eligible for re-election to the same office or position at that Annual General Meeting.

(a) (The election of a Trustee must not cause the number of Trustees to exceed the number fixed by rule 14(5) above.
(b) The Trustees may not appoint a person to be an Officer if a person has already been elected or appointed to that office and has not vacated the office.

(6) The Trustees may co-opt a Member (‘the Co-opted Member’) to act as an Officer or other Trustee to fill temporarily, until the conclusion of the next Annual General Meeting, any vacancy that may occur. No more than three Co-opted Trustees are permitted at any one time.

16. Powers of Trustees

(1) The Trustees must manage the business of the Club and have the following powers in order to further the Objects (but not for any other purpose):

(a) to raise funds. In doing so, the Trustees must not undertake any substantial permanent trading activity and must comply with any relevant statutory regulations;
(b) to buy, take on lease or exchange, hire or otherwise acquire any property and to maintain and equip it for use;
(c) to sell, lease or otherwise dispose of all or any part of the property belonging to the Club. In exercising this power, the Trustees must comply as appropriate with sections 36 and 37 of the Charities Act 1993, as amended by the Charities Act 2006;
(d) to borrow money and to charge the whole or any part of the property belonging to the Club as security for repayment of the money borrowed. The Trustees must comply as appropriate with sections 38 and 39 of the Charities Act 1993, as amended by the Charities Act 2006, if they intend to mortgage land;
(e) to co-operate with other charities, voluntary bodies and statutory authorities and to exchange information and advice with them;
(f) to establish or support any charitable trusts, associations or institutions formed for any of the charitable purposes included in the Objects;
(g) to acquire, merge with or enter into any partnership or joint venture arrangement with any other Charity formed for any of the Objects;
(h) to set aside income as a reserve against future expenditure but only in accordance with a written policy about reserves;
(i) to obtain and pay for such goods and services as are necessary for carrying out the work of the Club;
(j) to open and operate such bank and other accounts as the Trustees consider necessary and to invest funds and to delegate the management of funds in the same manner and subject to the same conditions as the Trustees of a trust are permitted to do by the Trustee Act 2000;
(k) to do all such other lawful things as are necessary for the achievement of the Objects.

(2) No alteration of these Rules or any special resolution shall have retrospective effect to invalidate any prior act of the Trustees, nor shall these Rules have retrospective effect or invalidate any act of the Trustees under previous Rules of the Club.

(3) Any meeting of Trustees at which a quorum is present at the time the relevant decision is made may exercise all the powers exercisable by the Trustees.

17. Disqualification and Removal of Trustees

A Trustee shall cease to hold office if he or she:

(1) is disqualified for acting as a Trustee by virtue of section 72 of the Charities Act 1993 (or any statutory re-enactment or modification of that provision);
(2) ceases to be a member of the Club;
(3) becomes incapable by reason of mental disorder, illness or injury of managing and administering his or her own affairs;
(4) resigns as a Trustee by notice to the Club (but only if at least two Trustees will remain in office when the notice of resignation is to take effect); or
(5) is absent without permission of the Trustees from all their meetings held within a period of six consecutive months and the Trustees resolve that his or her office be vacated.

18. Proceedings of Trustees

(1) The Trustees may regulate their proceedings as they think fit, subject to the provisions of these Rules.
(2) Any Trustee may call a meeting of the Trustees.
(3) The Honorary Secretary must call a meeting of the Trustees if requested to do so by a Trustee.
(4) Questions arising at a meeting must be decided by a majority of votes.
(5) In the case of an equality of votes, the person who chairs the meeting shall have a second or casting vote.
(6) No decision may be made by a meeting of the Trustees unless a quorum is present at the time that the decision is purported to be made.
The quorum shall be four.

A Trustee shall not be counted in the quorum present when any decision is made about a matter upon which that Trustee is not entitled to vote.

If the number of Trustees is less than the number fixed as the quorum, the continuing Trustees or Trustee may act only for the purpose of filling vacancies or of calling a general meeting.

The person elected as the Chair shall chair meetings of the Trustees.

If the Chair is unwilling to preside or is not present within ten minutes after the time appointed for the meeting, the Vice-Chair shall chair the meeting. If the Vice-Chair is also unwilling to preside or is not present, the Trustees present may appoint one of their number to chair that meeting.

The person appointed to chair the meetings of the Trustees shall have no function or powers except those conferred by this constitution or delegated to him or her in writing by the Trustees.

A Trustee taking part in the meeting via telephone conference, Skype or other electronic means shall be deemed to be present at the meeting.

In between Committee meetings, the Trustees may discuss matters by e-mail and, provided there is a consensus, valid and effectual decisions may be taken.

19. Irregularities in Proceedings

Subject to sub-clause (2) of this clause, all acts done by a meeting of Trustees shall be valid notwithstanding the participation in any vote of a Trustee:

- who was disqualified from holding office;
- who had previously retired or who had been obliged by the constitution to vacate office;
- who was not entitled to vote on the matter, whether by reason of a conflict of interest or otherwise;
- if, without:
  - the vote of that Trustee; and
  - that Trustee being counted in the quorum,
- the decision has been made by a majority of the Trustees at a quorate meeting.

Sub-clause (1) of this clause does not permit a Trustee to keep any benefit that may be conferred upon him or her by a resolution of the Trustees if the resolution would otherwise have been void.

No resolution or act of

(a) the Trustees
(b) the Club in general meeting
shall be invalidated by reason of the failure to give notice to any Trustee or member or by reason of any procedural defect in the meeting unless it is shown that the failure or defect has materially prejudiced a member or the beneficiaries of the Club.

20. Minutes

The Trustees must keep minutes of all:

(1) appointments of Officers and Trustees made by the Trustees;
(2) proceedings at meetings of the Club;
(3) meetings of the Trustees including:
  - the names of the Trustees present at the meeting;
  - the decisions made at the meetings; and
  - where appropriate the reasons for the decisions.

21. Annual Report and Return and Accounts

The Trustees must comply with their obligations under the Charities Act 1993 with regard to:

(a) the keeping of accounting records for the Club;
(b) the preparation of annual statements of account for the Club;
(c) the transmission of the statements of account to the Commission;
(d) the preparation of an Annual Report and its transmission to the Commission;
(e) the preparation of an Annual Return and its transmission to the Commission.

Accounts must be prepared in accordance with the provisions of any Statement of Recommended Practice issued by the Commission, unless the Trustees are required to prepare accounts in accordance with the provisions of such a Statement prepared by another body.

22. Registered Particulars

The Trustees must notify the Commission promptly of any changes to the Club’s entry on the Central Register of Charities.

23. Property

The Trustees must ensure the title to:

(a) all land held by or in trust for the Club that is not vested in the Official Custodian of Charities; and
(b) all investments held by or on behalf of the Club, is vested either in a corporation entitled to act as custodian Trustee or in no fewer than three individuals appointed by them as holding Trustees.
(2) The terms of the appointment of any holding Trustees must provide that they may act only in accordance with lawful directions of the Trustees and if they do so they will not be liable for the acts and defaults of the Trustees or of members of the Club.
(3) The Trustees may remove the holding Trustees at any time.

24. Insurance
The Trustees must insure suitably in respect of public liability.

25. Notices
(1) Any notice required by these Rules to be given to or by any person must be:
   (a) in writing; or
   (b) given using electronic communications.
(2) The Club may give any notice to a member either:
   (a) personally; or
   (b) by sending it by post in a prepaid envelope addressed to the member at his or her address; or
   (c) by leaving it at the address of the member; or
   (d) by giving it using electronic communications to the member’s address.
(3) A member who does not register an address with the Club or who registers only a postal address that is not in the United Kingdom shall not be entitled to receive any notice from the Club.
(4) A member present in person at any meeting of the Club shall be deemed to have received notice of the meeting and of the purposes for which it was called.
(5) (a) Proof that an envelope containing a notice was properly addressed, prepaid and posted shall be conclusive evidence that the notice was given.
   (b) Proof that a notice contained in an electronic communication was sent in accordance with guidance issued by the Institute of Chartered Secretaries and Administrators shall be conclusive evidence that the notice was given.
   (c) A notice shall be deemed to be given 48 hours after the envelope containing it was posted or, in the case of an electronic communication, 48 hours after it was sent.

26. Bye-laws
(1) The Trustees may from time to time make bye-laws for the conduct of their business.
(2) The bye-laws may regulate the following matters but are not restricted to them:
   (a) the admission of members to the Club and the rights and privileges of such members, and the entrance fees, subscriptions and other fees or payments to be made by members;
   (b) the procedure at general meetings and meetings of the Trustees in so far as such procedure is not regulated by these Rules;
   (c) the keeping and authenticating of records. If the bye-laws made under this Rule permit records of the Club to be kept in electronic form and require a Trustee to sign the record, the bye-law must specify a method of recording the signature that enables it to be properly authenticated;
   (d) generally all such matters as are commonly the subject matter of the rules of an unincorporated association.
(3) The Club in general meeting has the power to alter, add to or repeal the bye-laws.
(4) The Trustees must adopt such means as they think sufficient to bring the bye-laws to the notice of members of the Club.
(5) The bye-laws shall be binding on all members of the Club. No bye-law shall be inconsistent with, or shall affect or repeal anything contained in, these Rules.

The following is the full text of the Bye-laws which the Club proposes to adopt.

BYE-LAWS OF THE BRITISH ORNITHOLOGISTS’ CLUB (Registered Charity No 279583) (‘the Club’)

Adopted on the.............

These Bye-laws are made under Rule 26 of the Club Rules and must be read in conjunction with those Rules.

PART 1

Amendments
1. Proposed changes to the Rules, or any part thereof, shall be set out in a resolution which shall be sent to all Members either by notice in the Bulletin or by separate mailing, together with details of the Agenda, at least three months before the date of the general meeting at which the resolution is to be decided.
PART 2

General Meetings
2. The names of people nominated by the Trustees or Members of the Club under Rule 15(2) and (3) to be Officers and other Trustees shall be circulated to the membership at least 21 days before the relevant Annual General Meeting.
3. At the Annual General Meeting the business to be transacted shall comprise:
   (a) receiving and considering the Chairman’s Review, the Trustees’ Report and the Accounts for the preceding calendar year;
   (b) the regulation of matters having reference to the Bulletin;
   (c) the election of Officers and other Trustees;
   (d) any other business of which notice in writing shall have been given to the Honorary Secretary not less than 14 days before the meeting.
4. At a Special General Meeting no business may be transacted other than the business for which the meeting was called.

Powers of Trustees
5. The Trustees may appoint additional sub-committees, ex-officio officers and members to advise on and administer specific activities of the Club. While these appointees may advise the Trustees, executive authority rests with the Trustees.
6. The Trustees may appoint members (who may or may not be Trustees of the Club) to represent the Club on any Joint Committee set up in partnership with another Charity.
7. The Trustees shall appoint an Editor of the Bulletin for a term not exceeding four years. The editor shall be eligible for re-appointment.
8. The Trustees shall determine the annual subscription rate to be paid by members and review it annually.
9. The Trustees shall determine the annual subscription to be paid by institutions and other organisations (‘Institutional Subscribers’) wishing to receive the Bulletin and review it annually.
10. The annual subscriptions of Members and Institutional Subscribers shall be due for payment on 1 January in every year.
11. When a member, who is not an Officer or other Trustee, has rendered or is rendering the Club any services, the Trustees may, if it is deemed appropriate, waive the subscription due from that member for any year or years.

Proceedings of Trustees
12. The Editor of the Bulletin, Chairman and Members of any Sub-Committees of the Club and all ex-officio officers or members may attend meetings of the Trustees, by invitation of the Chairman or any of the Trustees, but without the right to vote on any issue.

The Bulletin
13. The Club shall aim to publish a journal under the title of the ‘Bulletin of the British Ornithologists’ Club’ four times a year.
14. One copy shall be distributed gratis to every member and Institutional subscriber who has paid the appropriate current annual subscription.
15. The Editor may receive an annual honorarium for such work, which shall be determined by the Trustees from time to time.
16. The Editor may offer advice to the Trustees on all editorial matters but executive authority rests with the Trustees.
17. No communication, the whole or any part of which has already been published elsewhere, shall be eligible for publication in the Bulletin, except at the discretion of the Editor.

Complaints
18. A member wishing to complain of the manner in which affairs of the Club are conducted must communicate the complaint in writing to the Chairman or Honorary Secretary who will raise the complaint as soon as practicable at a meeting of the Trustees for a decision or, if the recipient of the complaint considers the matter of urgency, will call a meeting of the Trustees specially to consider it.
19. The decision of the Trustees shall be communicated to the Member by the Honorary Secretary within 21 days of the relevant meeting.
SPECIAL GENERAL MEETING

A Special General Meeting of the British Ornithologists' Club will be held in Room SALC3, Sherfield Building, Imperial College, London SW7 2AZ at 5.40pm on Tuesday 12 June 2012.

AGENDA

1. Special resolution to propose the adoption of the new Rules for the Club in accordance with the draft special resolution attached.
2. Subject to the adoption of the new Rules the adoption of the Bye-Laws made under Rule 26 of the new Rules.

No other business will be conducted at this meeting.

British Ornithologists Club Charity Number 279583 ('the Club')

SPECIAL RESOLUTION

In accordance with Rule 40 of the Rules of the Club which were approved by the Special General Meeting of the Club on 31 October 2000 the Committee of the Club having published the proposed changes to the Rules of the Club in the Bulletin together with the details of the agenda for the Special General Meeting at least three months prior to today’s date and the Committee being satisfied that the proposed changes to the Rules would not have the effect of making the Club cease to be a charity at law

IT WAS RESOLVED by the members at the Special General Meeting held on today’s date as follows:

1. That the Rules of the Club be amended and adopted in accordance with the draft annexed hereto pursuant to Rule 40 of current Rules of the Club and the new rules shall operate until further amendment.
2. That the Committee shall forthwith notify the Charity Commission of the changes in accordance with the current procedure set down by the Charity Commission.

Dated the ........... day of ........................................ 2012

..............................................................
Honorary Secretary

Members who wish to vote for or against the adoption of the new Rules and Bye-laws, but who will be unable to attend the SGM, may vote by post or by e-mail. Letters or e-mails must reach the Honorary Secretary (contact details on the inside of the back cover) no later than 9 June 2012. Please address any queries on the proposed Rules or Bye-laws to the Chairman (see contact details on the inside front cover).

The 967th meeting of the Club was held on Tuesday 11 October 2011 in the Sherfield Building, Imperial College, South Kensington, London SW7 2AZ. Fifteen members and 11 non-members were present.

Members attending were: Miss H. BAKER (Chairman), Cdr. M. B. CASEMENT, RN, D. J. FISHER, F. M. GAUNTLETT, A. GIBBS, Revd. T. W. GLADWIN, K. HERON JONES, Dr J. P. HUME, R. R. LANGLEY, D. J. MONTIER, R. C. PRICE, Dr R. P. PRYS-JONES, P. RUDGE, S. A. H. STATHAM and C. W. R. STOREY.

Guests attending were: Ms M. BRISTOL (Speaker), Ms M. DAVIES, Ms K. DUKE, Mrs M. H. GAUNTLETT, Mrs J. GLADWIN, Mrs J. HERON JONES, Mrs A. J. MCDONALD, Mrs M. MONTIER, T. TROMBONE, Dr J. VERHELST and Ms S. WALSH.

Rachel Bristol spoke on the subject of Back from the brink: translocation of threatened endemic birds in the Seychelles. The main threats to Seychelles endemic birds are habitat loss and introduced predators, particularly cats and rats, which have occurred since human colonisation of the Seychelles began in the 1770s. The majority of the original forest cover was rapidly removed for plantation agriculture, predominantly coconuts in coastal plateau areas and cinnamon in the mountains, and rats and cats quickly spread to most islands. As a result, several species became extinct, including Seychelles Parakeet Psittacula wardi and Seychelles Chestnut-flanked White-eye Zosterops semiflavus, while others came perilously close. Seychelles Magpie-Robin Copsychus sechellarum was originally resident on most, if not all, the granitic islands, but was lost from all except Fréjate (219 ha), where a tiny population of 11–30 individuals clung on for c. 40 years until a recovery programme was instigated in 1990. Seychelles Warbler Acrocephalus sechellensis was reduced to a tiny population of 28–30 individuals on Cousin (26 ha) and Seychelles Paradise Flycatcher Terpsiphone corvina became extinct on all islands except La Digue.
To increase the numbers, range and survival prospects of five of the eight Seychelles threatened endemic birds, translocations (reintroductions and conservation introductions) have been used in tandem with habitat rehabilitation to create additional island populations of these birds. Due largely to translocations, we now have over 200 Seychelles Magpie-Robins on five islands, >3,000 Seychelles Warblers on four islands, Seychelles White-eyes Zosterops modestus on five islands, Seychelles Fodies Foudia sechellarum on five islands and Seychelles Paradise Flycatchers now have a second population on Denis. After some initial translocation failures in the 1970s and 80s, translocation methods have been continually refined and Seychelles now achieves consistent translocation success. Keys to success have been: ensuring all of the species’ habitat requirements are provided in the new environment (for example, habitat rehabilitation prior to release, predator management, provision of nest boxes and supplementary food), translocating only wild birds and tailoring the release methods to the species. In addition, intensive post-release monitoring is always undertaken to monitor survival and breeding of the released individuals, and also to detect any problems so that mitigation actions can be undertaken if necessary.

REFEREES
I am grateful to the following, who have reviewed manuscripts submitted to the Bulletin during the last year (those who refereed more than one manuscript are denoted by an asterisk in parentheses): Bud Anderson, John Bates, Bruce Beehler (*), Chris Bradshaw, Murray Bruce, Peter Castell, Jaime Chaves, Santiago Claramunt, Andrea Corso, Kevin Clark, William S. Clark, Martin Collinson (*), Sidnei M. Dantas, Richard Dean, Ron Demey (*), Edward C. Dickinson (*), Robert J. Dowsett (*), Françoise Dowsett-Lemaire, Guy Dutson, Chris Feare, Clemency T. Fisher, Juan F. Freile, Errol Fuller, Harold Greeney (*), Paul Greenfield, Steven M. S. Gregory (*), Paul Isenmann, Morton L. Isler, Niels Krabbe, Daniel F. Lane, Mary LeCroy (*), Jeremy Lindsell (*), Huw Lloyd, Michel Louette, Urban Olsson, Byron Palacios, David Parkin, José Fernando Pacheco (*), Marcos Persio, Alan Peterson, Robert Prys-Jones (*), Hugo Rainey, Van Remsen, Frank Rheindt, Eleanor Rowley, Roger Safford, Paul Salaman, Richard Schooë (*), Thomas S. Schulenberg, Sergio Seipke, Weber Silva, Adrian Skerrett, Frank Steinheimer (*), Lars Svensson (*), David R. Wells, Clayton White, Gary Wiles, and Kevin J. Zimmer.—The Hon. Editor
New sites and range extensions for endemic and endangered birds in extreme north-east Brazil

by Marcelo da Silva, Bruno Rodrigo de Albuquerque França, Luiz Yoshihiro Garcia de Lima Hagi, Miguel Rocha Neto, Damião Valdenor de Oliveira & Mauro Pichorim

Received 16 March 2010; final revision accepted 29 September 2011

Summary.—Between 1998 and 2011 we surveyed diverse localities within the Atlantic Forest and Caatinga biomes in the north-east Brazilian state of Rio Grande do Norte, registering the presence of Ochraceous Piculet Picumnus limae, Silvery-cheeked Antshrike Sakesphorus cristatus and Yellow-faced Siskin Sporagra yarrellii, none of which had definitely been recorded previously in the state. We also present new records of Tawny Piculet Picumnus fulvescens, expanding our knowledge of the species’ distribution.

In north-east Brazil, the state of Rio Grande do Norte is one of the least visited by naturalists and museum expeditions (Olmos 2003, Pacheco 2004). Information on its avifauna is limited to the historical records of Marcgrave (1942), several recent inventories (e.g., Nascimento 2000, Larrazábal et al. 2002, Olmos 2003, Azevedo Júnior et al. 2004) and the contributions of Sick (1991), Teixeira et al. (1993), Praxedes et al. (1997), Varela-Freire (1997), Varela-Freire & Araújo (1997), Medeiros et al. (2000), Whitney et al. (2000) and Silveira et al. (2003). Despite our lack of knowledge of the state’s avifauna, some areas within the Atlantic Forest, Caatinga and littoral are considered priorities for biodiversity conservation (Conservation International 2000, Larrazábal et al. 2002, MMA 2002, Bencke & Mauricio 2006). Here we present new data on species considered to be rare, threatened or endemic.

TAWNY PICULET Picumnus fulvescens
Considered Near Threatened (BirdLife International 2011b), P. fulvescens is confined to north-east Brazil (Sick 1997), where it is widespread from eastern Piauí and southern Ceará to Paraíba, Pernambuco, Alagoas and Sergipe (BirdLife International 2011b, Ruiz-Esparza et al. 2011). It was first recorded in Rio Grande do Norte at Serridó Ecological Station, in the Serra Negra do Norte (Nascimento 2000). We found this piculet to be widespread in the Atlantic Forest of Rio Grande do Norte and the south-central caatinga belt (Fig. 1, Table 1). On the east coast it occurs from Baía Formosa and Canguaretama, in the far south of the state, north to Parnamirim and Natal (Fig. 1), and we have also observed the species in deciduous forest at the ecotone between Atlantic Forest and caatinga. P. fulvescens is rather catholic in its habitat requirements, being found in caatinga, deciduous forest, semi-deciduous forest, and coastal savanna and scrub (Table 1). It is also found in small forest fragments and in regenerating areas, including at forest borders.

OCHRACEOUS PICULET Picumnus limae
Endemic to north-east Brazil and considered threatened (MMA 2003). In Ceará, until recently it was known only from the uplands of Maranguape, Aratanha and Baturité, but the species has since been found across almost the entire state (Girão et al. 2007). It also occurs in forest islands (known locally as brejos de altitude) on the slopes of residual plateaux

in the caatinga of Pernambuco (Roda 2002). Varela-Freire & Araújo (1997) mentioned, without details, the presence of *P. limae* in the interior of Rio Grande do Norte, around Seridó. We observed this species in the south-centre, far west and along the north coast of the state (Fig. 1, Table 1), mainly in areas of caatinga, except in the west, where it was found in forest islands atop mountains (Table 1). Our surveys found *P. limae* and *P. fulvescens* syntopically only at Seridó Ecological Station, in the Serra Negra do Norte. However, in southern Ceará, Olmos et al. (2005) found individuals of *P. limae* resembling *P. fulvescens*, suggesting they could be conspecific. *P. limae* generally occurs in secondary forest and near areas destroyed by monocultures, especially in the Serra do Martins, where the natural vegetation has been mainly replaced by cashew *Anacardium occidentale* plantations, and the Serra Santana do Matos. In the north of the state *P. limae* has been recorded in fragmented caatingas, primarily modified by oil drilling, farming and urban growth, further confirming that the species can adapt to habitat change.

**SILVERY-CHEEKED ANTSRIKE** *Sakesphorus cristatus*

Found from Piauí to Ceará, Paraíba, Pernambuco, and from Bahia to central Minas Gerais (Zimmer & Isler 2003, Marini & Lopes 2005). We recorded *S. cristatus* in caatinga in the
TABLE 1

Locations, habitat and documentation (if any) for Tawny Piculet *Picumnus fulvescens*, Ochraceous Piculet *P. limae*, Silvery-checked Antshrike *Sakesphorus cristatus* and Yellow-faced Siskin *Sporagra yarrellii* records in Rio Grande do Norte. Habitats: SF (semi-deciduous forest), DF (deciduous forest), CA (Caatinga), TB (tabuleiro = coastal cerrado) and AA (human-modified habitat). Observer: 1 = Marcelo da Silva, 2 = Bruno Rodrigo de Albuquerque França, 3 = Luiz Yoshihiro Garcia de Lima Hagi, 4 = Miguel Rocha Neto, 5 = Jorge B. Irusta, 6 = Francisco Sagot Martins, 7 = Damião Valdenor de Oliveira, 8 = Mauro Pichorim. Where stated, photographs and sound-recordings have been deposited on WikiAves (www.wikiaves.com.br).

<table>
<thead>
<tr>
<th>Location</th>
<th>Coordinates and altitude</th>
<th>Date</th>
<th>Number of individuals</th>
<th>Habitat</th>
<th>Documentation</th>
<th>Observer</th>
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<td>SF</td>
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<td>4 August 2007</td>
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<td>SF</td>
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<td>14 July 2011</td>
<td>Pair</td>
<td>SF</td>
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<tr>
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<td>Two pairs</td>
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<td>Fazenda Malhada Vermelh, Parelhas</td>
<td>06°44'54&quot;S, 36°40'29&quot;W; 368 m</td>
<td>9 June 2006</td>
<td>Two</td>
<td>CA</td>
<td>Photograph</td>
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<td>Dunas do Rosado, Porto do Mangue</td>
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<td></td>
<td>3 January 2009</td>
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<td>CA</td>
<td>Sound-recording (WA253695)</td>
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<td>14–18 May 2010</td>
<td>2ф, 2ф</td>
<td>CA</td>
<td>Photographs (WA143935, WA235424, WA316993)</td>
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<td>Lagoa Queimado, Pendências</td>
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<td>7 June 2006</td>
<td>1ф</td>
<td>CA</td>
<td>Photograph</td>
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<td>Location</td>
<td>Coordinates and altitude</td>
<td>Date</td>
<td>Number of individuals</td>
<td>Habitat</td>
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<td>1♂; 1♀</td>
<td>CA</td>
<td>Photograph</td>
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<td>Serido Ecological Station, Serra Negra do Norte</td>
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<td><strong>Sakesphorus cristatus</strong></td>
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<td>Dunas do Rosado, Porto do Mangue</td>
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<td>18 January 2007</td>
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<td>CA</td>
<td>Photographs and specimens deposited in the ornithological collection of UFRN (COUFRN)</td>
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<td>Fazenda Malhada Vermelha, Parelhas</td>
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<td>14 November 2005</td>
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<td>Sound-recording and photograph</td>
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<td></td>
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<td>29 January–1 February 2009</td>
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<td>CA</td>
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<td><strong>Sporagra jarrellii</strong></td>
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<tr>
<td>UFRN campus, Natal</td>
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<td>June 1998</td>
<td>One</td>
<td>AA</td>
<td>Sight-only record</td>
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<td>BR 226, Florânia</td>
<td>06°05'11&quot;S, 36°56'07&quot;W; 136 m</td>
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<td>1♀</td>
<td>CA</td>
<td>Sound-recording and photograph (WA295444)</td>
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hinterland at altitudes of 360–700 m and on the north coast at c.100 m. Although expected to occur in Rio Grande do Norte, ours are the first documented records in the state (Table 1).

YELLOW-FACED SISKIN Sporagra yarrellii
A globally threatened species endemic to north-east Brazil, where it occurs from Piauí to Ceará and in Paraíba to Bahia (MMA 2003, BirdLife International 2011a). In Rio Grande do Norte there is only one undocumented record from Serra Verde, Taipu (Praxedes et al. 1997). We photographed a female in a patch of caatinga beside highway BR 226, in the municipality of Florânia (Fig. 1, Table 1). In addition, J. B. Irusta (pers. comm.) observed a probable escapee on the campus of the Federal University of Rio Grande do Norte, in Natal. This species is sold illegally in several markets around Natal, but these birds may be trapped in neighbouring states as their dealers state that they originate in Paraíba and Pernambuco. During 2006–08 wildlife officers confiscated three, five and single individuals, respectively, which were later released in caatingas at Pureza, Tangará, Currais Novos, Campo Redondo and Santa Cruz, all in Rio Grande do Norte (A. P. Leite pers. comm.). In the Serra de Santana, Santana do Matos, some local people claim that S. yarrellii appears in upland areas (c.700 m) in March (suggesting migration) when they are illegally captured. The trade in this endangered bird in Rio Grande do Norte and in other north-eastern states is concerning (Pereira & Brito 2005, Rocha et al. 2006), with the relative lack of recent records suggesting a steady decline and that legal measures to prevent the species’ capture and sale require enforcement.

Our data on P. limae and S. yarrellii are important for establishing regional conservation priorities. The caatinga, montane forest islands and coastal forest fragments are being steadily destroyed and fragmented (SNE 2002, Fundação SOS Mata Atlântica 2009). The presence of threatened species should influence the selection of future conservation units. Seridó Ecological Station (1,128 ha) is the only fully protected area in the state, meaning that the protected area network is in urgent need of expansion. The montane forest islands of Luís Gomes are a priority as they are important for the conservation of P. limae and other species, with large remnants still biologically unexplored. Also relevant is the need for population surveys of several poorly known species and the exploration of other ecosystems found in the state.

Acknowledgements
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References:


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Interesting distributional records of Amazonian birds from Pastaza, Ecuador

by Galo Buitrón-Jurado

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SUMMARY.—Records of 28 species that extend our knowledge of their status and distribution in the eastern lowlands of Ecuador are presented, among them the fourth record of Pale-eyed Blackbird Agelastica xanthophthalmus in the country, only the ninth Ecuadorian locality for Grey-bellied Hawk Accipiter poliogaster, and the first record for prov. Pastaza of Long-billed Starthroat Heliomaster longirostris. Many of the other species reported on here might prove to be comparatively widely distributed in Ecuador’s Amazonian lowlands, but to date relatively little field work has been conducted in this region away from the main Napo drainage.

Knowledge of bird distribution in Ecuador has increased apace in recent years. New distributional records have been obtained at many sites, especially in previously poorly known areas of the country such as the Central Andes (Henry 2005), but also the western and eastern slopes (Freile & Chaves 2004, Henry 2005, Cisneros-Heredia 2006, Guevara et al. 2008). Even well-watched areas in the vicinity of Quito have provided interesting new records (Buitrón & Freile 2006, Vogt 2007).

Nevertheless, much work remains to fully elucidate the distribution of Ecuadorian birds, especially in parts of the country yet to be intensively explored. One such area is central Amazonian Ecuador (i.e. between the ríos Napo and Pastaza), despite that early ornithological workers made important collections at sites such as Canelos, Sarayacu and the río Bobonaza (Chapman 1926). Furthermore, although an impressive amount of ornithological research has been undertaken in Ecuadorian Amazonia since 1970, most research has been conducted in the north-east of this region, at relatively accessible sites in Cuyabeno and Limoncocha reserves and, more recently, at Yasuni National Park and at the many new lodges along the upper Napo, e.g. La Selva and Yuturi (Tallman & Tallman 1978, Canaday 1997, Canaday & Ribadeneyra 2001, Blake 2007). On the other hand, away from the upper Napo, the only site in Amazonian Ecuador from where many recent observations are available is Kapawi on the border with Peru and on the lower río Pastaza (Alvarez-Alonso & Whitney 2003).

Due to the patchy nature of ornithological collecting and probably also because early collectors lacked tape-recorders, many Amazonian species in eastern Ecuador are known from just a few scattered localities. Here I provide new distributional data for 28 species obtained from the region of the río Villano, prov. Pastaza, Ecuador.

Study area and Methods

Records were obtained in February–December 2008, at eight locations along the río Villano, prov. Pastaza, Ecuador (Fig. 1). Climate is wet with an estimated annual precipitation of >3,000 mm according to data from the nearest meteorological station at Puyo, prov. Pastaza (INAMHI 2006). The study area has a more hilly terrain than north-east Amazonian Ecuador and the region is characterised by vast tracts of lowland tropical forest with many small indigenous communities and scattered oil wells. An oil pipeline runs parallel to the río Villano, and a road linking the main indigenous communities west
to Puyo is under construction. As part of a biodiversity assessment of the region, the eight sampling sites were accessed via helicopter and were visited for 12–15 days. Most records were documented with photographs, sound-recordings and specimens collected using mist-nets. Specimens were prepared as study skins or preserved whole in spirit, and have been deposited in the ornithological collection of the Pontificia Universidad Católica del Ecuador, Quito (QCAZ). Sound-recordings have been uploaded to the xeno-canto website (www.xeno-canto.org). Elevation and coordinates for sites were obtained in the field using GPS data (Table 1). Distributional information cites Ridgely & Greenfield (2001) and taxonomy follows Remsen et al. (2011).

**TABLE 1**

Locations of bird records mentioned in the text (see Fig. 1).

<table>
<thead>
<tr>
<th>Sample sites</th>
<th>Coordinates</th>
<th>Elevation (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site 1</td>
<td>01°27'S, 77°26'W</td>
<td>270-380</td>
</tr>
<tr>
<td>Site 2</td>
<td>01°28'S, 77°29'W</td>
<td>340-440</td>
</tr>
<tr>
<td>Site 3</td>
<td>01°28'S, 77°31'W</td>
<td>382-553</td>
</tr>
<tr>
<td>Site 4</td>
<td>01°25'S, 77°40'W</td>
<td>543-700</td>
</tr>
<tr>
<td>Diez de Agosto road</td>
<td>01°23'S, 77°45'W</td>
<td>1,000-1,100</td>
</tr>
<tr>
<td>Paparahua community</td>
<td>01°29'S, 77°25'W</td>
<td>329-555</td>
</tr>
<tr>
<td>Kurintza community</td>
<td>01°30'S, 77°30'W</td>
<td>352-473</td>
</tr>
<tr>
<td>Tarangaro community</td>
<td>01°23'S, 77°23'W</td>
<td>328-446</td>
</tr>
</tbody>
</table>
Species accounts

**CATTLE EGRET** *Bubulcus ibis*
An individual of this widespread species was photographed beside the río Lliquino at site 1 on 14 June 2008. Previous records from prov. Pastaza are from Kapawi Lodge at the frontier with Peru. My observation presumably involved a wandering bird because, although the species is a common resident in the eastern foothills and north-east Amazonia, breeding colonies are unknown in the eastern lowlands (Ridgely & Greenfield 2001).

**GREY-BELLED HAWK** *Accipiter poliogaster*
An adult of this little-known hawk was observed in a patch of secondary forest at site 1 on 1 March 2008. The following diagnostic features were noted in good light, excluding confusion with similar forest raptors (i.e. *Micrastur*): the bird was an adult, having a very dark head and even blacker cap, the mask extending to the throat, and no extensive naked facial area. Back dusky grey and underparts appeared white. Tail black with three broad grey bands and a white tip. Irides red with a yellow cere and tarsi. Size and shape similar to **Collared** *Micrastur semitorquatus* and Slaty-backed Forest Falcons *M. mirandolirae*, which were both present in the area. Confusion with Collared Forest Falcon is improbable given its distinctive facial pattern, and this species also has dark ear-coverts, an olive-yellow facial area and dark irides (pers. obs.). Slaty-backed is more similar to Grey-bellied Hawk, but it lacks a capped or hooded effect, has a more extensive naked facial area, and has narrower tail bands (Ferguson-Lees & Christie 2001). The bird at Villano matched the illustration in Hilty & Brown (1986) and corresponded to the ‘capped’ or grey-faced variant, not to the hooded type (Ferguson-Lees & Christie 2001, Restall et al. 2006). Published records of Grey-bellied Hawk from Ecuador are from just nine localities (Sarayacu in Pastaza is that closest to the Villano), indicating its extreme rarity in the country; virtually all known records are from pristine habitats (Ridgely & Greenfield 2001, Howell 2002).

**GREY-NECKED WOOD RAIL** *Aramides cajanea*
Three were sound-recorded near Paparahua community on 23 July 2008 (XC77715). They were not seen but were identified by their distinctive voice (Moore et al. 2009) and the species is well known to the indigenous residents of the Villano area. Previous records in Ecuador are solely from the upper Napo with one record from the Kapawi area. As Grey-necked Wood Rail occurs throughout the lower Pastaza basin in Peru (Schulenberg et al. 2007), I suspect that it is more widespread in Ecuador than published records suggest.

**WHITE-BEARDED HERMIT** *Phaethornis hispidus*
Several mist-netted and observed at sites 1–2 and Paparahua community, in flooded evergreen forest. Four specimens were collected: QCAZ 3102, 3159, 3161, 3168. These are the westernmost records in Pastaza, but are unsurprising, given the species’ broad distribution across Amazonia (Restall et al. 2006).

**LONG-BILLED STARTHROAT** *Helionema longirostris*
A male observed on the south bank of the río Villano at Kurintza community, perched in an *Inga edulis* (Fabaceae) tree on 22 August 2008. It was a male based on the ruby throat, although the blue on the head was not very conspicuous. Confusion with other species is unlikely, because no species of similar size has an equally long, straight bill. Previous records in the eastern lowlands are from five localities on the Napo (Ridgely & Greenfield 2001). My record is the first for Pastaza and the species is unknown in adjacent Peru.
(Schulenberg et al. 2007). This hummingbird’s distribution in the eastern lowlands of Ecuador and Peru remains poorly understood. As it prefers secondary forest and edges, some authors have suggested that the species is probably spreading due to deforestation (Ridgely & Greenfield 2001).

**WHITE-NECKED PUFFBIRD** *Notharchus hyperrhynchus*
This species had been recorded south of the río Yasuni only in the Kapawi area (Ridgely & Greenfield 2001). I observed one at Kurintza community on 18 August 2008, perched in a tall secondary forest; it did not vocalise. This record confirms Ridgely & Greenfield’s (2001) suspicion that it occurs in the Pastaza drainage. There is an unpublished record from the Tena area, Napo province (pers. obs.), but the species is probably rare near the Andes.

**BLACK-FRONTED NUNBIRD** *Monasa nigrifrons*
Uncommon in flooded forest along the río Villano and one was photographed, on 14 June 2008, on the north bank of the Lliquino, a small tributary of the Villano, at site 1, where a flock was tape-recorded near Paparhua community on 22 July 2008. The species was also observed at two further localities, at site 2 and around Tarangaro community. Black-fronted Nunbird is known primarily from the Napo and Aguaroic drainage, and my records indicate that it occurs at elevations up to at least 500 m in Pastaza.

**WHITE-EARED JACAMAR** *Galbaleyrynchus leucotis*
One observed at site 2 on 12 May 2008 perched on a *Cecropia* (Urticaceae) tree in flooded forest beside the río Lliquino. In Pastaza, White-eared Jacamar is known only from a 19th century specimen from the río Copotaza, a small tributary of the Pastaza that flows south of Sarayacu, and from recent sightings at Kapawi (Ridgely & Greenfield 2001). My record indicates that *G. leucotis* occurs near the Andes from Sucumbios to Pastaza, and extends the known range 28 km north-west.

**CREAM-COLOURED WOODPECKER** *Celeus flavus*
A male was observed twice at site 2, at 400 m, in a subcanopy mixed-species flock including Squirrel Cuckoo *Piaya cayana*, White-fronted Nunbird *Monasa morphoeus*, Gilded Barbet *Capito auratus*, and Russet-backed *Psarocolius angustifrons* and Crested Oropendola *P. decumanus*. Cream-coloured Woodpecker has primarily been recorded from the Napo and Aguaroic drainage, but recent reports from Kapawi and my observations suggest that the species ranges widely in Pastaza.

**BROWN-RUMPED FOLIAGE-GLEANER** *Automolus melanopezus*
Two were mist-netted, photographed and collected (QCAZ 3230, 3230) in evergreen flooded forest at Tarangaro community, on 25 September 2008. South of the Napo, records are limited to Kapawi and Canelos (Ridgely & Greenfield 2001). Tarangaro is c.45 km east of Canelos and 150 km north-west of Kapawi, suggesting that Brown-rumped Foliage-gleaner could occur widely in central Amazonian Ecuador.

**CHESTNUT-CROWNED FOLIAGE-GLEANER** *Automolus rufipileatus*
One was trapped, photographed and collected (QCAZ 3226) at Tarangaro community, on 25 September 2008. It had white irides, but did not differ from Limoncocha specimens in plumage (QCAZ 1633, 1636). This specimen confirms the species’ presence in the Pastaza drainage. The species generally prefers *Gynerium* cane growing on floodplains or on river
islands (Ridgely & Greenfield 2001), but my record comes from a flooded area with no Gynerium.

CHESTNUT-WINGED HOOKBILL Ancistrops strigilatus
One observed in forest at Tarangaro community on 21 September 2008 was with a large mixed-species flock of insectivores and foraged 12 m above ground. Previous Pastaza records are from Sarayacu and Kapawi (Ridgely & Greenfield 2001). My record suggests that it may be more widespread in Pastaza.

SHORT-BILLED LEAFTOSER Selerurus ruficularis
One mist-netted and collected (QCAZ 3240) at 700 m at site 4, on 1 December 2008. In Ecuador, the species has mainly been recorded in the Napo drainage, but is also known from sightings at Kapawi, Pastaza. All previous records are from below 300 m, so my record increases the species’ known altitudinal range by 400 m and confirms its presence midway between the Napo and Pastaza rivers. It is possible that, like other low-density species, this leaftosser will prove to be more widespread than presently thought.

LONG-BILLED WOODCREEPER Nasica longirostris
The first record was of an individual in a patch of flooded evergreen forest at site 1, where one was heard and observed foraging in a large bromeliad in February 2008. Repeated sightings and sound-recordings of a pair were obtained in June 2008 at the same site (XC76038). Long-billed Woodcreeper is known in southernmost Pastaza only at Laguna Siguin, Kapawi and Sarayacu (Ridgely & Greenfield 2001), but it is probably widespread in prov. Pastaza.

OLIVE-STRIPED FLYCATCHER Mionectes olivaceus
First observed on 17 June 2008 at site 1. Subsequently, two were photographed and collected (QCAZ 3182, 3239) at the same location and Paparahu community at 400 m. The easternmost records in Ecuador are from Jatun Sacha on the upper Napo, at 500 m (Ridgely & Greenfield 2001). My specimens indicate that the species could be found below 400 m along the Villano, where a hillier terrain than in the north-east lowlands predominates. It has been suggested that Olive-striped Flycatcher might be only an altitudinal migrant or vagrant to the eastern lowlands (Ridgely & Greenfield 2001).

BROWNISH TWISTWING Cnipodectes subbrunneus
One was mist-netted and collected (QCAZ 3128) at site 1 on 25 June 2008. Apparently widespread in the eastern lowlands, but most previous records are from the north-east.

CATTLE TYRANT Machetornis rixosa
Three seen and one photographed at site 1 on 20 February 2008. Additional photographs of one perched on an Inga sp. tree obtained on 21 June 2008. Previous records from Ecuador are mainly from Coca airport, prov. Orellana (Ridgely & Greenfield 2006). My record is the first in Pastaza and the southernmost in Ecuador. The species seems to have recently invaded following the opening of large forest clearings in the Ecuadorian Amazon, as it was unknown in the country prior to 1991 and had not been recorded in adjacent Peru (N. Krabbe pers. comm.).
DWARF TYRANT-MANAKIN *Tyranneutes stolzmannii*
One was mist-netted at 700 m at site 4 on 28 November 2008. This species mostly occurs below 500 m but has been recorded to 900 m at Bermejo, prov. Sucumbios (Ridgely & Greenfield 2001).

BLACK-NECKED RED COTINGA *Phoenicircus nigricollis*
Rare in Ecuador, being absent even from large tracts of undisturbed and seemingly suitable habitat. At Tarangaro community, a male was observed eating fruits 5 m above the ground on 17 September 2008. This was the only record, despite specifically searching for a lek. I agree with Ridgely & Greenfield (2001) that the species might be considered Near Threatened due to its rarity, sensitivity to anthropogenic disturbance and its patchy distribution (Trail & Donahue 1991, Stotz *et al.* 1996).

WHITE-THIGHED SWALLOW *Neochelidon tibialis*
A pair mist-netted and collected (QCAZ 3021, 3028) beside a forest stream at site 1 in February 2008. Local and scarce in eastern Ecuador, it is primarily known from the foothills and the only previous records from Pastaza are from Kapawi (Ridgely & Greenfield 2001).

RED-CAPPED CARDINAL *Paroaria gularis*
One trapped in a mist-net set for bats at site 1 on 11 January 2008 was photographed and released (C. Boada pers. comm.). Previous reports in Pastaza are from Laguna Siguin (not located) and Kapawi (Ridgely & Greenfield 2001). This record indicates that it occurs to 400 m on the Villano. However, the species seems extremely rare along this river (possibly a vagrant), because I was unable to find it during subsequent visits to the area.

WHITE-LINED TANAGER *Tachyphonus rufus*
A pair photographed at Paparahua community, on 15 July 2008, perched on an exposed branch. The presence of both sexes precluded confusion with other species of *Tachyphonus* present in the area. This record supports the suggestion of Ridgely & Greenfield (2001) that the species might be increasing in the eastern lowlands in response to forest clearance.

SHORT-BILLED HONEYCREEPER *Cyanelpes nitidus*
A female foraged with a large mixed-species canopy flock of tanagers and insectivores in a patch of *Cecropia* trees c.1 km west of Paparahua community, on 23 July 2008. Confidently identified through direct comparison with a female Purple Honeycreeper *C. caeruleus* permitting me to note their different leg colours, the shorter bill of the present species (an especially useful character) and its distinctive face pattern with contrasting dark lores. Known in Ecuador from a few scattered sightings, mostly in the north-east, with the exception of records from Kapawi, Pastaza (Ridgely & Greenfield 2001). Its distribution requires further study, but this record and those from Kapawi suggest that it could be more widespread than currently supposed.

RUFOUS-COLLARED SPARROW *Zonotrichia capensis*
A pair feeding a juvenile photographed near Diez de Agosto, at 1,000 m, on 14 February 2008. Rufous-collared Sparrow is widespread in the Ecuadorian Andes with records at 1,500–3,800 m. However, in recent years it seems to be expanding to the eastern foothills following deforestation. Recent records are from Misahualli, Tena, and Archidona in Napo (at 395–500 m) and in Loreto (430 m) (P.-Y. Henry unpubl.). My record confirms breeding in this region.
GREEN OROPENDOLA *Psarocolius viridis*

Several individuals and flocks observed across the entire study area, usually in upland forest. Seen within most mixed-species flocks of frugivores, but such flocks were rare. One sound-recorded at site 1 on 25 June 2008. Except for sightings from Kapawi, in the eastern lowlands *P. viridis* had not been recorded south of the río Arajuno. My records extend its known range in Pastaza 150 km north-west, and suggest that it may be more widespread than thought.

CASQUED OROPENDOLA *Clypicterus oseryi*

One of the most frequently observed oropendolas in the study area. First recorded in the vicinity of site 1 in February 2008, but subsequently found along the río Villano up to 500 m at site 3 and around Paparahua community. Sound-recordings were obtained (XC77711), mainly at Kurintza (where photographs were also obtained), and sites 1–2. These records extend its range up to 500 m in Pastaza. According to Ridgely & Greenfield (2001), *C. oseryi* appears to be rare and uncommon near the Andes, but my records indicate that the species has been overlooked in Pastaza and extend its range 27 km east from Sarayacu and 150 km north from Kapawi.

RED-RUMPED CACIQUE *Cacicus haemorrhous*

A pair observed and sound-recorded with other icterids at Kurintza community (400 m) on 16 August 2008. First reported in Ecuador from Sarayacu and subsequently at Montalvo; recently it has also been recorded below 300 m, mostly in the Napo drainage in hilly *terra firme* forest, but it has also been seen at Kapawi. Given all previous and recent records in Pastaza, I suggest that the species might occur along the northern río Pastaza in Ecuador, although it has not been recorded south of this river in Peru (Schulenberg *et al.* 2007).

PALE-EYED BLACKBIRD *Agelastica xanthophthalmus*

Three were observed and a male sound-recorded (XC75483) on 26 June 2008 at site 1. They were observed in grass and cane beside an oxbow lake. The male was perhaps a subadult as it had a streaked throat, although its eyes were yellow and the rest of its plumage, as well as the tarsi and bill, were black as in adults. The group appeared to be resident in the area because one was also present in February 2008. The species was not recorded elsewhere in the study region, despite the presence of similar emergent vegetation around oxbow lakes, its preferred habitat (Orians & Orians 2000). Pale-eyed Blackbird was previously known from just three localities in Ecuador and my record is the southernmost. The reasons for its rarity are unknown and I concur with Ridgely & Greenfield (2001) that it merits Near Threatened status in Ecuador.

The records reported here contribute to our understanding of the distribution of Ecuadorian birds, by amplifying the known ranges of several species. Also, these records indicate that the distribution of birds in Ecuadorian Amazonia merits additional study. It is important to determine the expansion of some species associated with cleared areas as a result of deforestation. Similarly, the causes of rarity of some species demand clarification in order to fine-tune conservation action.

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Notes on the distribution and natural history of bird species in the Chocó bioregion of Ecuador

by Alejandro Solano-Ugalde

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Summary.—Here I present new information for 14 bird species in the Chocó bioregion of Ecuador. Novel distributional records are presented for eight species, including two globally Endangered (Baudó Guan Penelope ortoni and Banded Ground Cuckoo Neomorphus radiolosus) and one Vulnerable species (Brown Wood Rail Aramides wolffi). At the national level, new data are provided for four Endangered and two Vulnerable species. Additionally, I present natural history data to supplement the previously limited knowledge concerning five species, including the first description of a nest in the wild of Orange-breasted Fruiteater Pipreola jucunda. Of interest is the first known instance of a Dendrocoplatinidae (Strong-billed Woodcreeper Xiphocolaptes promeropirhynchus) predating a nest of a trochilid (Brown Inca Coeligena wilsonii), and the apparent extirpation of a local population of Baudó Guan.

The Chocó bioregion is defined as an area generally restricted to western Colombia and north-west Ecuador. Given high levels of biodiversity and endemism (greater than in any other area in the Americas), this bioregion is of high priority for global conservation and is listed as an Endemic Bird Area (Stattersfield et al. 1998). Although Ridgely & Greenfield (2001) summarised a huge body of information on the avifauna of the Ecuadorian part of this bioregion, many gaps remain especially in relation to our knowledge of natural history, species distributions and habitat use. More recently, fresh information has been presented on the distribution (Freile & Chaves 2004, Henry 2005, Alava et al. 2007), natural history (Karubian et al. 2003, Arcos-Torres & Solano-Ugalde 2007, Solano-Ugalde et al. 2010) and status (Freile et al. 2003, Jahn et al. 2007) of birds in the region, including some of high conservation concern such as Banded Ground Cuckoo Neomorphus radiolosus (Solano-Ugalde & Arcos-Torres 2007). While these publications further our understanding of the species in question, they point to the need for further data to support the implementation of sound conservation strategies for the Chocó bioregion.

Here I present novel information on the distribution and natural history of 14 species of Chocó endemics (combining the assessments in Stattersfield et al. 1998 and Ridgely & Greenfield 2001). Observations were made during bird surveys and monitoring, and while leading birding trips throughout the region. The following accounts summarise my observations, whilst a summary of the localities visited is presented in Table 1.

Species accounts

BERLEPSCH’S TINAMOU Crypturellus berlepschi
An adult was observed at close range (c.4 m) within primary forest at Reserva Mangaloma on 14 February 2007. The wholly sooty black body with a distinctive reddish-orange mandible and tarsi, and striking yellow-orange irides were diagnostic. The bird was also heard vocalising twice during a one-hour period. At least one other record is available from the same reserve in 2007 (R. Jonsson pers. comm.), and a sighting in late 2009 suggests that the species occurs in small numbers in the area. Previous records in Ecuador are mainly from prov. Esmeraldas, with a few from Pichincha. Most known localities are below 300
m, but a specimen was taken at 700 m in the ‘Mindo / Milpe’ region, although this has been considered controversial because both sites are generally considered to be higher in elevation (Ridgely & Greenfield 2001). However, Milpe gorge to the rio Pachijal and nearby Chaltayacu are at the correct elevation and possess appropriate habitat (S. Olmstead pers. comm.). At c.800 m, the Mangaloma record is the highest for the country and one of the most recent for Pichincha, together with unpublished observations from Silanche Bird Sanctuary (G. Buchelli & D. Brinkhuizen pers. comm.) and the Charco Vicente trail, in Cotacachi-Cayapas Reserve (B. Palacios in litt. 2011). The species occurs to 500 m in Colombia, with a single record at 900 m from the Anchicayá Valley (Hilty & Brown 1986). In Ecuador it is considered Endangered (Mena-Valenzuela & Jahn 2002).

**BAUDÓ GUAN Penelope ortoni**

During bird surveys at Reserva Mangaloma in 2006–08, at least two pairs of this globally Endangered cracid (BirdLife International 2011) were found, initially by their distinctive vocalisations. However, more recent visits, by reserve personnel and birdwatchers, have failed to find the species. In Ecuador it is considered rare to locally uncommon by Ridgely & Greenfield (2001), who suggested that the species receives no adequate protection in the country. In Pichincha there appear to be no other sites where the species still occurs, and the suggestion that it disappears even in the face of just light hunting pressure (O. Jahn in Ridgely & Greenfield 2001) is corroborated by my experience at Mangaloma. The species’ conservation in Ecuador is a priority. In Colombia, it is known from only a few localities (Hilty & Brown 1986), and in Ecuador habitat loss and its sensitivity to hunting has rendered the species Endangered (Jahn & Mena-Valenzuela 2002).

**BROWN WOOD RAIL Aramides wolffi**

On 8 December 2007 two were heard vocalising in the Yalare swamp, along the ‘Costanera’ road from San Lorenzo to Esmeraldas, and at least two were briefly observed thereafter. Again, on 21 February 2008, birds were heard calling and, on 15 March 2008, two pairs were heard interacting and two birds were observed walking across the main road. The Yalare wetlands represent a distinctive and unique habitat restricted to the north-west lowlands of Ecuador, known locally as guandal (Freile & Santander 2005). This locality represents a new site for this rare and very local rallid, which occurs at only a few sites in the country (Ridgely & Greenfield 2001, Freile et al. 2004, Álava et al. 2007, Freile 2008), although there is

### TABLE 1

<table>
<thead>
<tr>
<th>Site</th>
<th>Province</th>
<th>Elevation</th>
<th>Coordinates</th>
<th>Principal habitat / life zone</th>
</tr>
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<tbody>
<tr>
<td>Humedal de Yalare</td>
<td>Esmeraldas</td>
<td>20 m</td>
<td>01°05’N, 78°50’W</td>
<td>Flooded lowlands</td>
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<td>Reserva Canandé</td>
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<td>500 m</td>
<td>00°43’N, 79°02’W</td>
<td>Foothills and lower subtropics</td>
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<tr>
<td>Bosque Protector Los Cedros</td>
<td>Imbabura</td>
<td>1,200 m</td>
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<tr>
<td>Reserva Mariposas y Guáñas</td>
<td>Pichincha</td>
<td>600 m</td>
<td>Available</td>
<td>Foothills and lower subtropics</td>
</tr>
<tr>
<td>Reserva Mangaloma</td>
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<td>600–900 m</td>
<td>00°05’N, 79°00’W</td>
<td>Foothills and lower subtropics</td>
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<tr>
<td>Reserva Inti Llacta</td>
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<td>00°03’N, 78°42’W</td>
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<td>Refugio Paz de las Aves</td>
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<td>1,950 m</td>
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<td>Bosque Protector Mashpi</td>
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<td>1,400 m</td>
<td>00°09’N, 78°50’W</td>
<td>Lower subtropics</td>
</tr>
</tbody>
</table>
also a record from Silanche Bird Sanctuary, Pichincha (B. Palacios in litt. 2011). The species is considered Endangered nationally (Hilgert 2002) and Vulnerable globally (BirdLife International 2011).

**Banded Ground Cuckoo** *Neomorphus radiolosus*

I encountered a Banded Ground Cuckoo at Reserva Canandé on 8 January 2008. It ran across the trail 5 m ahead of me, hopped onto a 1 m-high stump, and remained perched for almost one minute, constantly raising and lowering its crest, and cocking and partially spreading its tail. With a single hop, the bird descended to the ground and immediately disappeared in the dense understorey. Within 3–5 minutes, the bird began vocalising for almost 15 minutes (and was perhaps joined by a second bird?). An army ant swarm (*Eciton* sp.) was in the vicinity and was attended by two Plain-brown Woodcreepers *Dendrocincla fuliginosa* and a pair of Immaculate Antbirds *Myrmeciza inmaculata*. Although new information concerning the species’ breeding biology is available (Karubian et al. 2007), since the publication of Ridgely & Greenfield (2001) only one new locality has been documented (Solano-Ugalde & Arcos-Torres 2007), although there is an unpublished record of two at Cerro Dogola, Mache Chindul Reserve (B. Palacios in litt. 2011). The species is considered Endangered nationally and globally (Greenfield 2002, BirdLife International 2011).

**Rose-Faced Parrot** *Pionopsitta pulchra*

A flock of six was observed around the headquarters at Reserva Los Cedros on 31 December 2009, and during the following days the species was observed consuming *Psidium guajava* (Myrtaceae) fruits. Apparently, the species has been resident at the reserve since at least 1998 (M. Cooper pers. comm.). Additionally, on 3 December 2008, a flock of ten was observed flying over the pass (1,500 m) above La Delicia, en route to the nearby Bosque Protector Mashpi. This parrot’s distribution, status and taxonomy were discussed by Ridgely & Greenfield (2011), who knew of no records from prov. Imbabura and none above 1,300 m. However, the species’ substantial decline due to deforestation and hunting (P. Mena Valenzuela & O. Jahn in litt. 2011) apparently were insufficient to list it as threatened in Ecuador (Ridgely & Greenfield 2001), although it was subsequently treated as Vulnerable (Jahn & Mena-Valenzuela 2002). During informal surveys of illegal pet markets in north-west Pichincha in 2009–10, I observed two cages with juvenile Rose-faced Parrots. Given recent declines in north-west Pichincha (e.g. along the Milpe Road, San Miguel de Los Bancos; pers. obs. 2006–10) and knowledge that the species is captured for the pet trade (an important but previously unknown threat), its conservation status in Ecuador might require reassessment.

**Indigo-Crowned Quail-Dove** *Geotrygon purpurata*

First recorded at Reserva Mangaloma in 2006, where it has regularly been seen since. On 13 August 2008, a pair was seen at Reserva Mariposas y Guanías, in the middle rio Pachijal drainage, where a pair has been tamed to eat pieces of banana from the ground since then (M. Muñoz pers. comm.; pers. obs.). Considered rare to uncommon in Ecuador, with just one previously known locality (under modern political divisions) in Pichincha; Simón Bolivar Road (Ridgely & Greenfield 2001). The species’ apparent preference for primary forest (*fide* Ridgely & Greenfield 2001) is supported by my observations, which are all from pristine habitat. These new localities, especially Mariposas y Guanías, are potentially good sites to further study the natural history of this elusive species. Hilty & Brown (1986) regarded it as a subspecies of Sapphire Quail-Dove *G. saphirina*, but from an Ecuadorian perspective *G. purpurata* is treated specifically and is ranked as Vulnerable due to its limited range and habitat preferences (Jahn & Mena-Valenzuela 2002).
GORGETED SUNANGEL *Helianthus strophicianus*

During the first week of October 2008, initially on the 7th, and until 20 November, an adult male was present at Reserva Yanacocha, where it visited one of the hummingbird feeders at a forest border along the Inca Ditch trail. Several times it was chased by a territorial Buff-winged Starfrontlet *Coeligena lutetiae*. This record, with an unpublished record from the reserve in 2005 (T. Santander pers. comm.), constitutes a new upper elevation for the species, which was previously known to reach 2,300 m (occasionally 3,000 m) in Ecuador (Ridgely & Greenfield 2001) and 2,800 m in Colombia (Hilty & Brown 1986).

BROWN INCA *Coeligena wilsoni*

On 17 November 2006, at Reserva Las Gralarias, I found an adult feeding two chicks at a mossy nest inside forest, 2 m above ground in a *Cinchona* sp. (Rubiaceae). The nest was revisited on 22 November and the chicks, mainly covered in brown down, weighed 7.5 and 8.1 g, respectively. External nest measurements were 73 mm wide × 65 mm tall, with a 100 mm ‘tail’ of hanging moss, and the cup was 35 mm wide × 25 mm deep. On 1 December I witnessed the chicks’ predation by two Strong-billed Woodcreepers *Xiphocolaptes promeropirhynchus* moving through the understorey. Approaching the nest I heard contact calls between the woodcreepers. Waiting 8 m distant, I saw the first individual perch <10 cm from the cup and immediately grasp a chick and fly off to a nearby perch where it gulped its prey whole. Subsequently, the second bird approached the nest and took the other chick, which it consumed while perched nearby. An adult *C. wilsoni* appeared and emitted an incessant high-pitched, short, alarm note for <1 minute, then left and did not return during the next ten minutes. There is a single breeding record from Ecuador (Greeney & Nunnery 2006) and, based on Schuchmann (1999), this is the first documented instance of predation of a hummingbird by a Dendrocolaptidae.

PALE-MANDIBLED ARACARI *Pteroglossus erythropygius*

A regular seasonal visitor to Reserva Inti Llacta (IL), where mostly seen during the less wet part of the year (June–September) in 2006–09. A similar pattern is observed at nearby Refugio Paz de las Aves, at 1,950 m (A. Paz pers. comm.), with a single record at 2,200 m above Bellavista (B. Palacios in litt. 2011). Recently recorded at IL in February 2009, when a juvenile was heard in second growth near the reserve headquarters. Although the natural history of the species was summarised by Berg (2001) there is limited information from the foothills and lower subtropical forest in Pichincha (Ridgely & Greenfield 2001); my records of juveniles with adults are in January–May. The species’ altitudinal range was previously considered to reach 1,500 m (Ridgely & Greenfield 2001). Nationally, Pale-mandibled Aracari is considered Vulnerable (Jahn & Mena-Valenzuela 2002).

CLUB-WINGED MANAKIN *Machaeropterus deliciosus*

On 26 June 2008 a female-plumaged bird was mist-netted at Reserva Inti Llacta (IL). A week later the mechanical sound diagnostic of the species was heard on the same trail as the initial capture (in the headwaters of the río Pachijal), and since then there have been sporadic records suggesting year-round presence. Ridgely & Greenfield (2001) suggested that the species might be a seasonal altitudinal migrant. My records might reflect post-breeding dispersal as, at least in part of its range, the species breeds during the first half of the year (H. F. Greeney pers. comm.), and they also constitute a new max. elevation in Ecuador, where Club-winged Manakin was previously known to 1,500 m, whereas in Colombia the species regularly occurs to 1,900 m (Hilty & Brown 1986).
ORANGE-BREASTED FRUITEATER *Pipreola jucunda*

On 12 November 2008 A. Paz informed me of an active nest at Refugio Paz de las Aves. It was visited on 18 November and video-taped for three hours, but thereafter the nest was found abandoned. The nest was 4.5 m above the ground in a 7 m-tall Palicourea sp. (Rubiaceae) tree in semi-wooded pasture with nearby forest. Inside there was a dead chick weighing 14.5 g, mostly unfeathered with several conspicuous botfly larvae (Oestridae), and which measured: exposed culmen = 9.6 mm, nares to tip = 4.1 mm, tarsus = 17.3 mm. The bill and tarsus showed only hints of reddish, the gape yellowish olive, and the eyes were closed. The nest was cup shaped, measuring inside 81.3 mm (width) × 21.2 mm (depth), and externally 122.9 mm (width) × 38.1 mm (depth), with a tail of hanging moss of 67.4 mm. Externally the nest was composed of dead and live mosses, whilst internally the materials were bound to a network of interwoven fine twigs and fern fibres. Additionally, a pair with nesting material was observed briefly in old second growth at Reserva Inti Llacta on 13 December 2009. The species’ natural history was briefly described by Samper (1992) and a pair with nesting material was observed in April in south-west Colombia (Strewe 2001). My record represents the first breeding data for the species in the wild, although nesting in captivity was described by Lint & Dolan (1966).

BLACK SOLITAIRE *Entomodestes coracinus*

On 3 December 2008 one was heard along the La Magusa Road in the surroundings of Bosque Protector Mashpi. Since then, I have encountered the species on eight of 15 visits to appropriate habitat (heavy moss forest), with at least one presumed territory, and have recorded max. 3 adults. In Ecuador the species is rare to uncommon and inconspicuous (Ridgely & Greenfield 2001), which together with habitat loss and fragmentation led to its classification as Near Threatened (Jácome 2002). Although the last-named author mentioned six localities where the species is apparently protected in Ecuador, none of these seems to possess an easy accessible resident population as at Mashpi.

YELLOW-COLLARED CHLOROPHONIA *Chlorophonia flavirostris*

I first recorded this species on 14 December 2007 at Reserva Inti Llacta, when I witnessed a pair vocalising and acrobatically feeding at a *Miconia* sp. (Melastomataceae) shrub in forest edge. Additionally, on 19 January 2009, at Refugio Paz de las Aves, a male was feeding at an Araliaceae tree in primary forest. Regarded as rare to locally common in the foothills and lower subtropics, albeit only as far south as Pichincha in Ecuador, where it occurs in small numbers and only seasonally (December–April; M. Lysinger in litt. 2001; Ridgely & Greenfield 2001). My records increase the species’ the altitudinal range to 1,950 m, although in Colombia it occurs regularly to 1,900 m in the Anchicayá and Dagua drainages, in dpto. Valle (Hilty & Brown 1986).

MOSS-BACKED TANAGER *Bangsia edwardsi*

On 14 February 2010, I observed an apparent juvenile at Reserva Inti Llacta (IL), the first record for the reserve. It was aged by the pinkish gape and overall subdued coloration. On 26 June 2010 a family party was in the buffer zone of Bosque Protector Mashpi, the juvenile being fed an unidentified insect by one of the adults after incessant begging. The same day a second family party was seen, but in this instance one of two juveniles was observed carrying moss to a nearby clump 6 m high in a tree, where a nest was apparently being constructed. The IL record constitutes a new altitudinal limit in Ecuador, with most previous records at 500–1,100 m, other than a record at 1,700 m in prov. Carchi (Ridgely & Greenfield 2001) and a single recent record at 1,650 m in Pichincha (Vogt 2007). The species is especially abundant in the area around Bosque Protector Mashpi. Besides a nest described
from Esmeraldas (Robbins & Glenn 1988), nothing concerning the species’ breeding appears to have been published, making my records the first breeding data for Pichincha and the first confirmation of helpers at the nest in this tanager (Isler & Isler 1999).

Most of my records were made in reserves within one of Ecuador’s most-visited regions by ornithologists, the Mindo area. Although it has received attention from national and international NGOs, as well as independent researchers (Kirwan & Marlow 1996), the data presented here prove how much remains to be discovered concerning the avifauna of this megadiverse area that includes three Important Bird Areas (Freile & Santander 2005). It is interesting to note that, for six of the 14 species mentioned here, an altitudinal range extension is reported, which is especially important given the severe loss of lowland forest in western Ecuador (Dodson & Gentry 1991, Freile & Santander 2005). Natural history studies and better data on distributions of species restricted to certain biogeographic regions remain a priority in Ecuador (Freile et al. 2006, Freile & Rodas 2008) yet, controversially, such studies are generally in decline (Beehler 2010). Given the conservation priority of the Chocó Endemic Bird Area, those observers and researchers with unpublished data are encouraged to share them via published and unpublished media. Exploring data-sharing initiatives wherein both scientific and citizen science participants can plan more effective conservation strategies should be a relatively easily achievable common goal for the future. For instance, around Mashpi, a proposal to create a new Important Bird Area is being evaluated, together with a watershed conservation initiative promoted by local people and Quito municipality. Lastly, in agreement with Freile & Rodas (2008), given evident declines for several species, updating the Ecuadorian Red Data Book for birds should be a priority.

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Type specimens of the Imperial Woodpecker
Campephilus imperialis (Gould, 1832)

by Robert P. Prýs-Jones

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Summary.—This paper addresses long-standing uncertainty regarding the composition of Gould’s type series for his name Picus imperialis, 1832, and the source from which they were derived. There is good evidence that he had at least six specimens, collected by Damiano Floresi, to hand when he described the species, and these are identified with reasons. Further, a review is provided of information associated with all nine other early (c. pre-1860) specimens of which the author is aware, none of which can confidently be ascribed syntype status on current knowledge.

John Gould (1832) described, as Picus imperialis, a large and striking new species of woodpecker from, as he then thought, ‘that little-explored district of California which borders the territory of Mexico’. Beyond the fact that he clearly had both male and female, he gave no indication as to the number of specimens he had before him and never elaborated on this in print subsequently. Likewise, although he discussed the fact that he had both sexes in correspondence, e.g. in a letter to Sir William Jardine on 19 December 1833 that included a sketch of the head of one (Sauer 1998, Snyder et al. 2009), there is no record of how many in total. However, Salvin & Godman (1888–97: 445) later stated unequivocally that Gould ‘having obtained five or six skins of it, exhibited some of them at a meeting of the Zoological Society of London held 14th August, 1832’.

Salvin & Godman (1888–97: 445) further remarked that ‘some years ago’ [= 1876, according to the specimen labels] two of these skins, which from their manner of preparation they believed had originated from a mining engineer called Floresi, had passed from Gould, who died in 1881, into their possession. In 1888, Salvin and Godman in turn passed these specimens to the British Museum (Natural History) (BMNH), where they remain as BMNH 1888.8.5.60 (female) and 1888.8.5.61 (male). Neither retains any label from Gould or earlier, but one Salvin & Godman label on each notes ‘Type of the species as descr. by Gould. Obtained in exchange for a sp. of Phasianus chrysoulas. See B. Asia Part XXVIII. O.S.’ These specimens have consistently been highlighted as syntypes of the species since, e.g. by Hargitt (1890), Warren (1966) and Knox & Walters (1994).

However, in the apparent absence of evidence to the contrary (see below), all of Gould’s ‘five or six’ skins must in principle be considered syntypes. An understanding of their current whereabouts and status is therefore important. Snyder et al. (2009) provided an appendix containing a summary of all Imperial Woodpecker specimens of which they became aware during their research, although they overlooked a few early ones (see below). Of these, only a small number, held at BMNH and the National Museums Liverpool, possess clear potential type status through their connection with Gould. For clarity in what follows, information on all specimens mentioned here is summarised in Table 1.

Before turning to the specimens themselves, however, it is relevant to consider who Floresi was, how certain it is that he collected the type specimens and how sound was restriction of the type locality of Picus imperialis to Bolaños, Jalisco, by Nelson (1898). Damiano Flores d’Arcais (G. Chiozzi in litt. May 2011), also known outside Italy as Damiano
Floresi (e.g. Gould 1861: text to pl. 141, Palmer 1928; but spelling per G. Chiozzi in litt. June 2011), was perhaps best known ornithologically as a collector of hummingbirds, but Gould (1856) does explicitly record that he collected *Picus imperialis*. According to Palmer (1928: 277), Floresi was ‘An Italian engineer in charge of a mine operated by an English company at Bolaños, Mexico, where, in 1845, he collected a hummingbird which was named in his honour’. This statement is concordant with the description by Gould (1861: text to pl. 139) of the new species *Selasphorus floresii* (since shown to be a hybrid) from a single specimen collected in Bolaños by Floresi and sent by the latter to George Loddiges in 1845.

However, elsewhere, Gould (1875: text to pl. 6) referred to two specimens of the trogon *Trogon neoxenus* that he received from Floresi sometime after 1836 as having been taken ‘probably in the neighbourhood of the Real del Monte mines, as it was in that district that most of his birds were procured’. Gould (1856: 63) also stressed Floresi’s connection with the Real del Monte mines, noting however that he ‘travelled himself, and kept collectors, who penetrated into the remotest parts of that country’. The Real del Monte mines (20°08’N, 98°40’W) are in Hidalgo, some considerable distance from those at Bolaños (21°50’N, 103°49’W) in Jalisco. Although Floresi is known to have visited both sites, it was at Bolaños that he was based for a number of years (Todd 1977). Given that the Real del Monte area is also outside the recorded range of the Imperial Woodpecker, a type locality for the species in the vicinity of Bolaños seems highly probable. Floresi, who Gould considered an ‘esteemed friend’ (Sauer 2006: 111), died prior to May 1853 (Gould 1861: text to pl. 261, first published in a part dated 1 May 1853 [Coues 1879]), ‘immediately on landing in Panama’ (Gould 1861: text to pl. 142). Further research into the life of Floresi, whose name is also linked to other important Mexican bird specimens, would seem important and has begun (G. Chiozzi & R. P. Prys-Jones unpubl.).

Snyder et al. (2009: 151) listed two specimens in the National Museums Liverpool, LM D3868 (male) and LM D3868a (female), as ‘received in 1851 from 13th Earl of Derby; J.
Gould syntypes?’. These were not mentioned by Wagstaffe (1978) in his list of avian types, although Wagstaffe did comment on the close relationship that Gould had with the Earl of Derby, whose collection, bequeathed to the city of Liverpool in 1851, forms the nucleus of the National Museums Liverpool bird collection. C. Fisher (in litt. December 2010 and March 2011) has confirmed that label information reveals that the Earl of Derby purchased the specimens directly from Gould. She further considers that this probably occurred during the 1830s, as they both have Lord Derby’s original numbers on them, a system that he is thought to have changed during that decade.

Other specimens that seem likely on current evidence to have a claim to syntype status are held at BMNH. Knox & Walters (1994) reproduced the label data associated with each of them, but unfortunately also perpetrated several errors in interpretation. The oldest published list of Imperial Woodpecker specimens held at BMNH is that of Gray (1868), who listed three: a male from ‘Mr. J. Gould’s Collection’; another male lacking any collector data; and a female from ‘the Zoological Society’s Collection’. All lack date information and are recorded as from ‘California’, which until 1848 was still politically part of Mexico. This could suggest that Gould’s Imperial Woodpecker specimens might have been shipped from California, though this must remain speculative.

Just over 20 years later, Hargitt (1890) corrected the locality data for these three specimens to Mexico and also noted that the data-less male and the ‘Zoological Society’ female were mounted for display (cf. Anon. 1892), whereas the ‘Gould’ male was a study skin. Although Knox & Walters (1994) referred to the two mounted specimens as ‘Not found 1988’, they remain on display at the museum’s South Kensington site to the present day. It was formerly BMNH policy that specimens designated for display should first have their labels removed, and this is unfortunately true for these specimens. However, details for the ‘Zoological Society’ female can be determined from the relevant specimen register, which records BMNH 1855.12.19.325 as being a ‘Picus imperialis’ purchased from the Zoological Society when it disbanded its museum in that year (Sharpe 1906, Wheeler 1997).

This Zoological Society of London (ZSL) specimen is almost certainly one of Gould’s type series. Between 1828 and 1837, Gould was working for the ZSL, during which time at least some specimens received by him were deposited in the Society’s museum, as he acknowledged in his letter of 19 December 1833 to Sir William Jardine, in which he wrote ‘I received it [Picus imperialis] from California and have both sexes, at least they now form part of the collection of the Zoological Society’ (Sauer 1998: 52). Furthermore, Malherbe (1861: 4) referred to a pair of Imperial Woodpeckers he had seen ‘dans la collection de la Société zoologique de Londres’. However, Gould also maintained his own collection and dealt in specimens on his own behalf during the period of his employment, as well as playing a role in the disposal of the ZSL’s ‘duplicate’ specimens (Wheeler 1997). Importantly also, in 1857 he purchased the bird skins still remaining at the ZSL after the dissolution of its museum (Wheeler 1997). In the absence of any useful surviving bird catalogues, distinguishing clearly between ZSL and Gould specimens is difficult.

Knox & Walters (1994) assigned a registration number, BMNH 1988.21.6, to the ‘Gould’ male skin recorded by Gray (1868) and Hargitt (1890) because its label lacked any existing number. However, it is almost certainly BMNH 1838.5.12.108, recorded in the relevant register as ‘Picus imperialis Gould. S. America [sic]. Purch. Gould’; interestingly, this specimen series (1838.5.12) from Gould contained numbers of Mexican birds, largely from Tamaulipas. It is also probably the specimen mentioned in a letter of 23 July 1838 from Edwin Prince, Gould’s secretary (Lambourne 1987), to Gould, who was then en route to Australia. Prince noted that on 18 July he went ‘To Brit. Mus. and made out fresh a/c’s for the Birds brought in which was included a Picus imperialis omitted by you’ (Sauer 1998:
264). As such, it may well have been the first example of the species to reach the BMNH (but see below).

That it took around 30 years from the date of the first description of a species as striking as *Picus imperialis* for ornithologists to suggest in print that it originated from Mexico strongly suggests that only a very few batches of specimens reached Europe in the interim. There is in fact no evidence suggesting that Gould received more than one consignment, and good evidence for only one further consignment before 1860: that containing the four specimens received in or slightly before 1836 by John Taylor, a British mining magnate with major business interests in Mexico (Todd 1977), passed on by him to Victor Masséna, Duc de Rivoli, and which subsequently arrived at the Academy of Natural Sciences, Philadelphia, in 1846 (Gill 1995), where they remain (Snyder et al. 2009; N. H. Rice in litt. March 2011). However, the origins of a few early specimens remain to be established: the data-less BMNH male (Gray 1868), a male that Cabanis (1863) noted as present in the Museum Heineanum, now the Museum Heineanum Halberstadt (MHH); a male that Malherbe (1861) recorded in the Dresden Museum; and a pair that Malherbe (1861) noted as being in his own collection.

Many bird specimens received by the BMNH in the mid-19th century were registered under their generic names only, and this includes an array of ‘*Picus*’ acquired from both Gould and the ZSL. A potential candidate specimen for the data-less BMNH male is the ZSL male mentioned above, although the lack of a donor’s name in Gray (1868) suggests purchase via a dealer may have been involved. However, the provenance of such data-less specimens will only be established with certainty through discovery of relevant archival information. The Museum Heineanum male, now registered as MHH 7735, was acquired from G. A. Frank, a natural history dealer based in Amsterdam (B. Nicolai in litt. January 2011); its provenance is given by Cabanis (1863: 101–102) as ‘(West-) Mexico’, but no collecting or acquisition date is either given or can be deduced.

No Imperial Woodpecker specimen now exists in the Staatliches Museum für Tierkunde, Dresden, but an inventory of April 1881 recorded that an otherwise data-less specimen from ‘California’ was then present (T. Töpfer in litt. April 2011). Its number was 2774, and the catalogue also bears the indication ‘A.S.’, meaning ‘Alte Sammlung’ (‘old collection’), an abbreviation used for those birds that date from the pre-1849 collection. The lack of yellow underlining to its collection number in the catalogue, which was added for those birds that survived World War II, suggests that the specimen was probably destroyed at this time, like much of the Dresden collection (Roselaar 2003).

The collection of Alfred Malherbe (1804–66) was subsequently acquired by Count Turati, whose own collection was incorporated into the Museo Civico di Storia Naturale, Milan (MSNM) in 1884 (Roselaar 2003). Although MSNM also suffered great damage and specimen loss in World War II, Malherbe’s pair of Imperial Woodpeckers, acquired by Turati in 1860, survived and information concerning them was summarised by Violani et al. (1984), who also provided a photograph of the male. The male of the mounted pair is MSNM Av 31059 (ex coll. Turati no. 4385) and the female MSNM Av 27993 (ex coll. Turati no. 4386), but the only other information noted is their origin, ‘California’. Any of these early specimens discussed in this and the preceding two paragraphs might conceivably have had a link to Gould, but evidence is lacking.

Overall, six specimens have strong claims to be considered syntypes of the name *Picus imperialis*: BMNH 1838.5.12.108 (male—also registered as 1898.21.6), 1855.12.19.325 (female), 1888.8.5.60 (female) and 1888.8.5.61 (male); and LM D3868 (male) and LM D3868a (female). All of these appear to have been part of Gould’s original series and no information is available to demonstrate that his description was based only on a subset of them.
Acknowledgments

I am extremely grateful to Giorgio Chiozzi, Kevin Clark, Ann Datta, Clemency Fisher, Gary Graves, Maureen Lambourne, Mary LeCroy, Adolfo Navarro, Bernd Nicolai, Nate Rice, Douglas Russell, Frank Steinheimer, Till Töpfer and Claire Voisin for information and other assistance during the preparation of this paper.

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Range extensions and other noteworthy bird records from the Ecuadorian Andes

by Elisa Bonacorso, Diana Arzuza, Galo Buitrón-Jurado, Ana Lucía Charpentier, Mery Juiña, Paolo Piedrahía & Juan F. Freile

Received 21 June 2011

Summary.—We present the results of nine ornithological expeditions aimed at documenting bird diversity in areas of Ecuador that remain relatively under-explored. The majority of new records were made along the western Andes, either in the central or the southern extensions of the outer slope, suggesting that several species may have more continuous distributions than previously thought. Among the most interesting records are those of Collared Inca Coeligena torquata in western Azuay, Tricoloured Brush Finch Atlapetes tricolor in the Cerro de Celica-Guachanamá, in Loja, and White-browed Spinetail Hellmayrea gularis and Bluish Flowerpiercer Diglossa caerulescens in the Cordillera de Chilla, in El Oro. These new records in the south-west of the country suggest that extensive sampling is still needed in this region. We also report new altitudinal records for several species and suggest that they may represent range extensions rather than occasional records.

Among South American countries, Ecuador is one of the better studied in terms of its avifauna (Winker 1998). Nevertheless, several species and areas of the country remain poorly known, yet represent important priorities for research and conservation (Freile et al. 2006). Species distributions and biogeographic patterns are not well understood (Krabbe 2008), despite that a major compendium on the country’s birds was published within the last decade (Ridgely & Greenfield 2001). Nevertheless, new records and range extensions are published regularly (e.g. Freile 2004, Cisneros-Heredia 2006, Solano-Ugalde et al. 2007) and continuous publication of such data is needed to understand the present, past and possible future biogeographic patterns across the country and the Neotropics. Herein, we present the results of nine ornithological expeditions aimed at documenting avian diversity in areas of Ecuador that remain relatively under-explored.

Materials and Methods

Ornithological field work was carried out in February–December 2009 throughout the Ecuadorian Andes at 1,700–3,400 m. Sites surveyed included tracts of pristine or secondary montane forests. All specimens were collected using mist-nets and prepared as study skins, and are deposited at the Museo de Zoología (QCAZ), Pontificia Universidad Católica del Ecuador, in Quito. Previous knowledge of geographic distributions is based on Ridgely & Greenfield (2001), but taxonomy, species sequence and vernacular names follow Remsen et al. (2011). Locality information is provided in Table 1 and Fig. 1.

Species accounts

COLLARED INCA Coeligena torquata
Four specimens (QCAZ 3848, 3865, 3886, 4203) collected at the río Chipla, Cruzpamba, prov. Azuay, in secondary forest, on 13–17 January 2009, corresponded to C. t. fulgidigula, which
also occurs elsewhere on the west slope of the Andes. Although this species is found on both slopes of the Andes, on the west slope it had been reported (at least historically) south only to western Chimborazo (Ridgely & Greenfield 2001), with a recent report from western Bolívar (Freile 2004). Our specimens extend the known distribution on the west slope south to western Azuay. Given that no obvious geographic barrier exists immediately south of this region, the species’ range might continue south to the Pucará area, just north of the rio Jubones.

GORGETED SUNANGEL *Heliangelus strophianus*

A specimen (QCAZ 3509) from Bosque Protector Peñas Blancas, Salinas, prov. Bolívar, taken on 27 May 2009, in a forest fragment with bamboo patches and shrubs, was captured at a forest edge with several shrubs where other individuals were observed visiting Ericaceae

---

**TABLE 1**

Localities from where range extensions are reported (Fig. 1).

<table>
<thead>
<tr>
<th>Locality</th>
<th>Coordinates</th>
<th>Altitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cordillera de Toisán, San Antonio de Cuellaje, Imbabura</td>
<td>00°29'39&quot;N, 78°33'57&quot;W</td>
<td>2,657 m</td>
</tr>
<tr>
<td>Bosque Protector Peñas Blancas, Salinas, Bolívar</td>
<td>01°25'53.00&quot;S, 79°05'52.00&quot;W</td>
<td>2,637 m</td>
</tr>
<tr>
<td>Reserva Ankaku, Pastaza</td>
<td>01°16'3.2&quot;S, 78°02'52.4&quot;W</td>
<td>1,679 m</td>
</tr>
<tr>
<td>Laguna Culebrillas, Parque Nacional Sangay, Cañar</td>
<td>02°25'35.60&quot;S, 78°52'11.90&quot;W</td>
<td>3,971 m</td>
</tr>
<tr>
<td>Río Chipla, Cruzpampa, Azuay</td>
<td>02°44'44.59&quot;S, 79°24'32.11&quot;W</td>
<td>2,464 m</td>
</tr>
<tr>
<td>Cordillera de Chilla, El Oro</td>
<td>03°30'11.41&quot;S, 79°37'18.80&quot;W</td>
<td>3,193 m</td>
</tr>
<tr>
<td>Huajalá, Loja</td>
<td>04°06'9.828&quot;S, 79°58'46.704&quot;W</td>
<td>2,100 m</td>
</tr>
<tr>
<td>Guachahurco, Parroquia Guachanamá, Loja</td>
<td>04°01'58.58&quot;S, 79°52'11.06&quot;W</td>
<td>3,102 m</td>
</tr>
</tbody>
</table>

Figure 1. Map of Ecuador showing our study sites.
flowers. It is found along the west slope of the Andes, continuously through Carchi to Pichincha, with scattered records from Cotopaxi south to El Oro (Ridgely & Greenfield 2001). Ours is the first specimen from Bolivar. Whether the species has a continuous distribution along the west slope of the Andes of Ecuador requires elucidation.

GREENISH PUFFLEGG _Haplophaedia aureliae_
Two specimens (QCAZ 3802, 4204) collected at Reserva Ankaku, in mature forest, on 16 and 18 October 2009 were of the subspecies _H. a. russata_. Greenish Puffleg is patchily distributed on the east slope of the Andes, but seems more abundant on isolated ridges, such as Volcán Sumaco, the Cordillera del Condor, Cordillera del Cutucú and Cordillera de los Guacamayos (Ridgely & Greenfield 2001). Our record from near the Cordillera de los Llanganates confirms its presence in Pastaza from where there were no published records.

WHITE-BROWED SPINETAIL _Helmaynrea gularis_
A specimen (QCAZ 3706) was taken in secondary scrub forest at the Cordillera de Chilla, prov. El Oro, on 18 August 2009. The species occurs on both slopes of the Andes; in the west it has been recorded south to Azuay (Ridgely & Greenfield 2001). Our specimen extends the known distribution south of the río Jubones, into the mountains of Chilla. As noted before, this isolated range merits further research to elucidate bird distribution patterns and to understand the role of the río Jubones as a barrier to species distributions (Krabbe 2008).

STREAK-BACKED CANASTERO _Asthenes wyatti_
Three specimens (QCAZ 3874, 3940, 3976) were collected in grassy páramo at Laguna Culebrillas, Parque Nacional Sangay, prov. Cañar, on 4–5 December 2009. They corresponded to _A. w. aequatorialis_ and are the southernmost specimens of this taxon. Krabbe (2000) reported a population of _A. w. aequatorialis_ as far south as the Cajas plateau, but no specimens have been collected there. The other subspecies in Ecuador, _A. w. azuay_, was recently rediscovered by Krabbe (2000) and has been reported as far north as the Altiplano of Tarqui in southern Azuay (03°22'S, 79°11'W). Whether these two forms are geographically isolated or if their plumage differences represent clinal variation is unclear. Although their vocalisations are identical (Krabbe 2000), this might merely reflect recent geographic isolation.

FLAMMULATED TREEHUNTER _Thripadectes flammulatus_
Two specimens (QCAZ 3585, 3587) were collected at Bosque Protector Peñas Blancas, Salinas, prov. Bolívar, in secondary forest, on 27 and 29 May 2009. Uncommon on both outer slopes of the Andes, and very local above the inter-Andean valley. On the west slope the species has been recorded south to Azuay, at Sural and Portete (Ridgely & Greenfield 2001). Our specimens and prior observations from Salinas (Poulsen & Krabbe 1998) confirm the species’ presence in Bolívar.

SLATY-BLACKED CHAT-TYRANT _Ochthoea cinnamomeiventris_
Two specimens (QCAZ 3825, 3967) collected in secondary forest at the río Chipla, Cruzpampa, prov. Azuay, on 19 January 2010. Occurs on both slopes of the Andes, but on the west slope it is known to occur south only to Chimborazo (Ridgely & Greenfield 2001). Our specimens extend its southernmost limit to western Azuay, on the Cajas plateau, partially supporting the suggestion of Krabbe _et al._ (1998), who also found the species at Mazán on the east slope of the same plateau (N. Krabbe pers. comm.).
YELLOW-BELLIED CHAT-TYRANT *Ochthoeoa diadema*

Four specimens (QCAZ 3550, 3522, 3943, 4206) collected at Bosque Protector Peñas Blancas, Salinas, prov. Bolivar, in secondary forest, on 27 May 2009. Found on both slopes of the Andes, but in the west it has been recorded only as far south as Cotopaxi and locally to western Azuay, at Sural (Ridgely & Greenfield 2001). Our specimens confirm a previous sight record from Bolivar, at Tiquibuzo (Freile 2004).

SLATY THRUSH *Turdus nigriceps*

A male (QCAZ 3873) collected near the canopy of a cloud forest at Huajalá, prov. Loja, on 26 February 2009, possessed significant fat but its age was not determined. Known to breed locally in Loja, but available evidence suggests that the species vacates this region during the second half of the year (Ridgely & Greenfield 2001).

BLUISH FLOWERPIERCER *Diglossa caerulescens*

A specimen (QCAZ 3707) was collected at the Cordillera de Chilla, prov. El Oro, in upper montane forest (3,193 m), on 18 August 2009. The site comprised secondary forest with scattered Spanish Cedar *Cedrela montana* and *Erythrina* spp. trees. The species is known from the west Andes south to Pichincha, with scattered records further south (Ridgely & Greenfield 2001). Two specimens deposited at the Academy of Natural Sciences Philadelphia collected at Portete (Azuay), and our record from Chilla, suggest this species might be more widespread in south-west Ecuador. Subspecific identification is difficult because differences from specimens taken on the east slope are subtle (i.e., plumage slightly duller overall in the east). Plumage variation in *D. caerulescens* appears complex, even within east slope populations (Ridgely & Greenfield 2001), and there are two apparently undescribed subspecies, in the north-west (south to Pichincha) and the Cordillera del Cutucú (Fjeldså & Krabbe 1990).

BLACK-CAPPED TANAGER *Tangara heinei*

A specimen (QCAZ 3299) was collected at Chilmá Bajo, 57 km west of Tufiño on the road to Chical, prov. Carchi, on 24 February 2009. The site was characterised by secondary forest with scattered Spanish Cedar *Cedrela montana* and *Erythrina* sp. trees. On the west slope of the Andes, *T. heinei* has been found locally at Pichincha (in the Tandayapa–Nanegal region) and more recently in southern Imbabura, east of Apuela (Ridgely & Greenfield 2001, Freile 2004). Our specimen represents the northernmost record on the west slope, and comes from an area close to the Colombian border.

TRICOLOURED BRUSH FINCH *Atlapetes tricolor*

A specimen (QCAZ 3843) was collected at Guachahrco, Parroquia Guachanamá, prov. Loja, in shrubby forest, on 23 February 2010. Widespread and fairly common on the west slope of the Andes, from Esmeraldas south to Pichincha and west Cotopaxi, it has also been recorded at a few localities in Azuay and El Oro (Ridgely & Greenfield 2001). Our specimen indicates the species’ presence in the Cerro de Celica-Guachanamá of Loja and also provides a new upper altitudinal limit, at 3,102 m; it was previously recorded to 2,300–2,400 m, in Cotopaxi (Ridgely & Greenfield 2001). Comparison with material at QCAZ revealed that our specimen corresponds to *A. tricolor*, and not to *A. latiniuchus*, which normally replaces the first-named species at higher elevations and has been recorded at 1,800–2,800 m in these mountains (N. Krabbe pers. comm.).
Altitudinal records

We recorded several species outside their usual altitudinal range, as follows. **Toucan Barbet** *Semnornis ramphastinus* (QCAZ 3610), at 2,657 m, in the Cordillera de Toisán (Imbabura), on 19 January 2009; mostly recorded at 1,400–2,400 m. **Bar-bellied Woodpecker** *Veniliornis nigriceps* (QCAZ 3824) at 2,464 m, at the río Chipla, Cruzpampa (Azuay), on 18 January 2010; previous lowest records 2,800 m. **Red-faced Spinetail** *Cranioleuca erythroneura* (QCAZ 3941) at 2,050 m, at Chilmá Bajo (Carchi), on 22 February 2009; previous highest record 1,900 m. **Scaled Antpitta** *Grallaria guatimalensis* (QCAZ 4205) at 1,679 m, in Reserva Anaku (Pastaza), on 16 October 2009; recorded mainly below 1,300 m in the eastern foothills. **Jelski’s Chat-Tyrant** *Ochthoea jelskii* (QCAZ 3840, 3845) at 3,102 m, in Guachachuro (Loja), on 23 February 2010; previously recorded mostly to 2,800 m. **Southern Rough-winged Swallow** *Stelgidopteryx ruficollis* (QCAZ 3942) at 2,056 m, at Chilmá Bajo, (Carchi), on 25 February 2009; previously reported below 1,800 m. **Masked Flowerpiercer** *Diglossa cyanea* (QCAZ 3540-41), at 2,056 m, at Chilmá Bajo (Carchi), on 23–25 February 2009; recorded mainly at 2,400–3,500 m in northern Ecuador.

Given that continuous habitat exists between these records and the species’ usual altitudinal ranges we believe that the above-mentioned records could represent ‘real’ altitudinal range extensions, at least locally, rather than occasional records.

Acknowledgements

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On the breeding biology of Yellowish Flycatcher

*Empidonax flavescens* in Costa Rica

*by Manuel Marín*

Received 25 June 2011

**Summary.**—I report data on the breeding biology of Yellowish Flycatcher *Empidonax flavescens* from the highlands of central Costa Rica. Nesting coincided with the early part of the rainy season. Nests were cup-shaped and constructed of fine grasses, while the outer part was a bulky structure mainly built from mosses. Clutch size was 2–3 eggs and incubation period was 16–17 days. The birds had at least two broods per season and, in some cases, perhaps three broods. The nestling period lasted 15–16 days. Nesting success was very high (81%) which is unusual for a small passerine that constructs an open cup nest.

Yellowish Flycatcher *Empidonax flavescens* is a small tyrannid that is widespread in subtropical and temperate zones from southern Mexico to western Panama (AOU 1998). In Costa Rica it is a common resident on both slopes at c.600–2,400 m (Stiles & Skutch 1989), and in the centre of the country the species is found particularly around edges, open woodland and along rivers. Although some notes on its behaviour and breeding biology, based on one nest in Guatemala and three nests in Costa Rica, were reported by Skutch (1967), nothing has been published concerning incubation and growth rates. Large quantities of data are available concerning growth rate patterns for many temperate species, but limited comparative data are available for tropical taxa (Ricklefs 1968, Starck & Ricklefs 1998). Here I report data on growth rates and additional data on the species' breeding biology from observations made in central Costa Rica.

**Study site and Methods**

Data for this study were gathered in Costa Rica, in the río Tiribí area, prov. San José (1,900–2,100 m) at 09°57'N 83°55'W. Observations were made primarily in the river canyon, but also in adjacent areas. The site was described in detail by Marín & Stiles (1992) and it was visited in June–August 1995 and May–August 1996–97, with additional observations in June–August 1984–85 and February–September 1986. Visits were made to nests during the incubation and nestling periods at 1–5-day intervals. Body mass was recorded using AVINET spring balances (± 0.1 g) of 10 and or 30 g capacity, depending on nestling age. Culmen length was taken to the nearest 0.1 mm using dial calipers, and wing length (flattened) and tail length using a standard wing rule, following the techniques described by Baldwin *et al.* (1931). All measurements were recorded prior to 12.00 h. To facilitate individual recognition, nestlings were initially marked using coloured thread and then banded with a numbered plastic band.

Egg measurements (Table 1) are based on museum specimens deposited at the Western Foundation of Vertebrate Zoology (WFVZ) and field measurements from the study area. Eggs were measured to the nearest 0.01 mm using digital calipers. Mean egg mass was calculated from museum specimens at WFVZ, using the formula (\(M=k\times L^3\)), where \(L\) = length, \(B\) = breath and \(k\) was calculated by regression using fresh egg mass (Hoyt 1979). Egg shapes follow Preston (in Palmer 1962). The incubation period was taken from the laying of the first egg to the hatching of the first egg. The hatching date is recorded age zero on
the graphs. Adult measurements and body mass were taken from mist-netted birds and specimens at WVFZ, all from the study area. The time for nestlings to grow 10–90% of their body mass (the T_{10-90} period; Case 1978) and the growth rate constant K (Ricklefs 1976) were determined using methods outlined by these authors.

### Results and Discussion

**Breeding seasonality.**—The rainy season in central Costa Rica starts in April and ends in December, with two rainfall peaks, in May–June and in September–October, and less wet periods in June and August (Marin & Stiles 1992). Nests were found from mid April to mid July, with most being documented in May–June (83%; n=18) during the early wet season. Post mid July, between the peaks of the rainy season, the species was not observed at the study site. Although Skutch (1967) indicated that the season started not earlier than March (he reported fledged young by late April), within the study area the earliest recorded date for fresh eggs was 14 April. The breeding season in the study area coincided with Skutch’s (1950) general findings in Costa Rica that at high altitudes nests are concentrated in April–June. Skutch (1950) indicated that food is most abundant during this period, which coincides also with the main breeding season in the country for many other bird species.

Although individual females were not marked, evidence suggests that this flycatcher may produce more than two broods per season. At most nests, after fledging of the first brood, a second nest was constructed in close proximity, adjacent or atop the old nest, and on three occasions a third nest was built post fledging of the second brood.

**Nest, eggs and incubation.**—The nest was well described by Skutch (1967) as ‘bulky masses of green moss, or of mosses and liverworts, interlaced with a few fibrous rootlets, horsehair, or similar binding materials.’ All of the observed nests were cup-shaped and built of mosses and liverworts, and the cup was lined with very fine and soft dry grasses (Fig. 1A–B). All nests observed or collected (n=27) were constructed on embankments, 24 over running water and three on road embankments. For ten nests the height above the water or ground level was 1.0–3.2 m (mean 1.9 m).

Eggs were creamy white with reddish-brown blotches and spots mostly towards the larger end. Most had a well-defined wreath and some were ‘capped’ (Fig. 1B). Clutch size was 2–3 eggs. Of 27 nests from field or museum specimens, ten clutches comprised two eggs and 17 had three eggs. For four nests Skutch (1967) found that three nests had three eggs and one nest two eggs. Shape ranged mainly from short-subelliptical (69%) to subelliptical (27%) but some were oval (4%) (n=26). For measurements see Table 1. Incubation period at four nests was 16–17 days, which is longer than in more temperate congeners (Fitzpatrick 2004). Of 21 eggs from nine nests followed in more detail, 17 nestlings (81%) fledged successfully, three failed to hatch and one nestling was found dead at an early age. This

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Mean</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
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<td>Length (mm)</td>
<td>17.84</td>
<td>0.766</td>
<td>16.48–19.39</td>
</tr>
<tr>
<td>Width (mm)</td>
<td>13.91</td>
<td>0.362</td>
<td>13.20–14.78</td>
</tr>
<tr>
<td>Mass* (g)</td>
<td>1.93</td>
<td>–</td>
<td>1.7–2.1b</td>
</tr>
</tbody>
</table>

*a* Calculated from mean egg measurements; see Methods.

*b* Calculated mass from the smallest and largest egg.
rate of productivity is relatively high for a
small tropical passerine that builds an open-
cup nest (Skutch 1976).

Nestling development.— I followed the
full development of seven nestlings, from
two nests, from hatching through fledging and 11 nestlings from four nests, with partial
data ranging from one to four measurements per nestling. The nestlings hatched almost
completely naked, with a few buff-coloured down feathers on the back and head. The body
was yellowish orange, with the gape flanges bright yellow and the gape yellowish orange.
The bill was yellowish with a grey tone to the tip and the claws were orange-yellow.

Hatching mass was 1.9 g (15% of adult size; adult mass [sexes combined] was 12.6 g ±
0.47; n=4). Maximum mass in nestlings was reached just prior to fledging. The maximum
mass reached by nestlings from a brood size of two was 14.7 g (116% of adult size) but in a
brood of three was 13.5 g (107% adult size), i.e. 8.1% difference (Fig 2A). The overall T
was 9.7 days and K was 0.453. I have no comparable data from the tropics, but in Pacific-
slope Flycatcher Empidonax difficilis, a temperate breeding species with a larger clutch
size (up to five eggs) and of similar mass (9–12 g) these values are 10.1 days and K=0.436
(Ricklefs 1968, Fitzpatrick 2004), i.e. slightly slower than Yellowish Flycatcher. The larger
(15 g) Willow Flycatcher *E. traillii* has a faster growth with values of 9.3 days and \( K=0.472 \) (Ricklefs 1968). No clear pattern to its development exists because (a) Yellowish Flycatcher contrasts with the general trend that tropical birds develop slower than temperate species, but (b) it is in accordance with overall trends that smaller species develop faster (Ricklefs 1968, 1983).

Maximum wing length prior to fledging was 48.5 mm, 77% of adult size (63.2 mm ± 2.36; \( n=7 \)) and the tail reached a maximum of 20 mm, 40.1% adult size (49.8 mm ± 1.86; \( n=7 \)) (Fig. 2C). Tarsus length by age 11 days was adult size (16.2 mm ± 0.69; \( n=7 \)) and culmen length reached a max. 74.5% of adult size at fledging (adult size 10.2 mm ± 0.11; \( n=7 \)).

The eyes were closed on hatching and about half-open by days 5–6. By age 5–7 days buffy down was dominant on the head and back, and pin feathers on the wings were close to bare sheath. On days 5–6 the yellowish feathers on the chest and body-sides were ready to sprout and they broke sheath on days 7–8. By age 9–10 days the rectrices had broken sheath. By days 11–12 the young were very active and were apt to jump from the nest when approached. Nestlings fledged at age 15–16 days, but in one nest Skutch (1967) found that the nestlings remained 17 days.

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A new taxon in the Mourning Wheatear  
*Oenanthe lugens* complex

*by* Hadoram Shirihai, Guy M. Kirwan & Andreas J. Helbig

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Summary.—We describe a new taxon in the Mourning Wheatear *Oenanthe lugens* complex, from the basalt desert of eastern Jordan and southern Syria. This population has been almost universally considered to represent a melanistic colour morph of nominate *O. lugens*, but it also differs from any other member of the complex in lacking rufous undertail-coverts. It further differs from *O. l. lugens* in rump pattern and morphometrics. ‘Morph’ status is inappropriate, because the population is geographically restricted, whereas colour morphs are typically evident throughout the distributional range of a taxon. Suggestions that mixed pairings of pale- and black-morph birds occur are refuted by recent evidence. The new taxon has the wing formula and white wing panel of the *lugens* complex, but is closest in these respects to *O. l. persica*, whereas the largely black plumage makes it virtually identical to male Variable Wheatears *O. picata opistholaena*. Because mtDNA analysis suggests that the new taxon is inseparable from *O. l. lugens*, we describe it at subspecies level. Remarks concerning distribution and conservation are presented, along with considerations for future research.

The Mourning Wheatear *Oenanthe lugens* complex has traditionally been considered to comprise eight, mainly sedentary subspecies (Ripley 1964, Collar 2005), as follows: (1) *O. l. lugens* (M. H. C. Lichtenstein, 1823) in the Levant south to north-west Saudi Arabia, eastern Egypt and north-east Sudan; (2) *O. l. halophila* (Tristram, 1859) in North Africa roughly from Libya as far as Morocco; (3) *O. l. persica* (Seebomh, 1881) in southern and western Iran, wintering mostly in eastern Arabia; (4) *O. l. lugentoides* (Seebomh, 1881) in the highlands of south-west Saudi Arabia and western Yemen; (5) *O. l. boscaweni* G. L. Bates, 1937, in north-east Yemen and southern Oman; (6) *O. l. lugubris* (Rüppell, 1837) in the highlands of Eritrea and north and central Ethiopia, (7) *O. l. vauriei* R. Meinertzhagen, 1949, in north-east Somalia; and *O. l. schalowi* (G. A. Fischer & Reichenow, 1884), in southern Kenya and north-east Tanzania, at the southern limits of the complex.

These taxa fall into three or four groups, some of which are increasingly separated as species (e.g., Porter et al. 1996, Panov 2005, Svensson et al. 2009, Jennings 2010), namely *O. lugens* (including *halophila* and *persica*; Mourning Wheatear, with the former sometimes separated as Maghreb Wheatear *O. halophila*), *O. lugentoides* (including *boscaweni*; South Arabian Wheatear), *O. lugubris* (including *vauriei*; Abyssinian Black Wheatear) and *O. schalowi* (Schalow’s Wheatear), with the latter two frequently ‘lumped’. Some authors have gone further. For example, Porter & Aspinall (2010) recognised *O. l. lugens* and *O. l. persica* at species level, under the vernacular name Eastern Mourning Wheatear, but Förschler et al. (2010) published molecular data to support splitting *persica* off from *lugens*. The latter study, the only published genetic data to date, recommended treating four species-level groupings, *O. lugens*, *O. persica*, *O. lugentoides* and *O. lugubris*. Nonetheless, some authorities have maintained a single species (e.g., Collar 2005), whilst others recognise only a two-way split (Zimmerman et al. 1996, Dickinson 2003) between those forms in North Africa and the Middle East, and those in East Africa.

One unresolved issue is the status of the population inhabiting the basalt deserts of north-east Jordan and southern Syria, as well as perhaps adjacent north-west Saudi Arabia
Figures 1-2. First-summer male Basalt Wheatear *Oenanthe lugens warriae*, showing the nearly all-black plumage, with white undertail-coverts, small white rump patch and basal tail feathers, between Azraq and Ar Ruwayshid, Jordan, April 2000 (Hadoram Shirihai); aged and sexed by combination of juvenile-retained remiges and primary-coverts (only tiny white spots remain on their tips due to wear, but these are still diagnostic), and highly glossed black plumage.
(see Tye 1994, Jennings 2010), which has been more or less universally treated as a black 'morph' of nominate lugens. Although two specimens (both in the Natural History Museum, Tring) have been available for many decades, it was only in the 1960s that the presence of a virtually all-dark Oenanthe population in this region was realised by J. Ferguson-Lees and D. I. M. Wallace (see Nelson 1973, Wallace 1983). They, along with subsequent observers such as Macfarlane (1978) and Clarke (1981), attributed their observations to O. picata opistholeana. Only with the simultaneous publication of Tye (1994) and Andrews (1994) was it accepted that this population represented a black morph of O. lugens, although L. Cornwallis in Cramp (1988) had already suggested that the typical wing pattern of O. l. lugens found in these birds was evidence of their true affinity.

This interpretation has stood largely unchallenged until now, with the exception of brief remarks in van der Vliet & Lange (1997), whilst Khoury et al. (2010) suggested that the basalt desert population of O. lugens might warrant 'independent taxonomic status from the typical morph of lugens'. However, a molecular study (using the 16S and cox1 mitochondrial genes) published concurrently to Khoury et al. (2010) by some of the same team suggested that the basalt population 'is best treated as a colour morph of the subspecies O. lugens warriae, since our genetic data ... reveals no difference', and that 'its colouration might be regarded as a morphological adaptation to the local conditions in the black-basalt shield' (Forschler et al. 2010: 764–765).

HS's interest in this population began on his first visit to Tring in 1985, when he found that the 'black wheatear' of eastern Jordan belonged with lugens and not picata, based on wing formula and that the female specimen held there was quite unlike that of the sexually dimorphic O. p. opistholeana. The interest has continued during preparations for a monograph on the Oenanthe (Shirihai et al. in prep.), and together with the late A. J. Helbig, HS visited its breeding range in April 2000 and 2001, taking blood samples and making detailed observations. They became convinced that the basalt population merited taxonomic recognition, despite finding very low mitochondrial genetic divergence from lugens, but these findings went unpublished due to AJH's sudden death in October 2005. Although research into the basalt population is still ongoing, by ourselves, and others, we believe that the arguments for its taxonomic recognition are sufficiently powerful to describe it as:

**Oenanthe lugens warriae, subsp. nov., Shirihai & Kirwan**

**Basalt Wheatear**

Holotype.—Natural History Museum, Tring (BMNH 1947.14.214); first-year female collected by W. K. Bigger at ‘Aneizeh, Transjordan’, on 9 November 1926, and originally labelled ‘Oenanthe leucopyga’ by the collector. Tye (1994) speculated that this locality is modern-day Jabal Aneiza (Unayzah) on the border between Jordan, Iraq and Saudi Arabia, at 32°15'N, 39°15'E; we have no reason to doubt this, despite lying outwith the known breeding range (I. J. Andrews in Tye 1994), especially given that other evidence demonstrates

Legend to plate on opposite page

Figure 3. Basalt Wheatear Oenanthe lugens warriae, in its characteristic basalt desert habitat, where it frequents wadi sides with more open soil cover, larger and varyibly-shaped rocks, and sometimes low bluffs, between Azraq and Ar Ruwayshid, Jordan, April 2000 (Hadoram Shirihai)

Figure 4. Habitat of Basalt Wheatear Oenanthe lugens warriae, the desolate rolling boulder fields (often broken by low bluffs or road cuttings with boulder piles— as in the background here), between Azraq and Ar Ruwayshid, Jordan, April 2000 (Hadoram Shirihai)

Figure 5. Basalt Wheatear Oenanthe lugens warriae shares its habitat with another endemic passerine taxon, the darkest subspecies of Desert Lark Ammomanes deserti annae, between Azraq and Ar Ruwayshid, Jordan, April 2000 (Hadoram Shirihai)
the new taxon’s capacity to appear outside the breeding range (see below). Label data: ovary small (annotated separately as being ‘non-existent’); bill and legs black; irides dark brown; stomach contents seeds. Measurements of the holotype, other specimens and live birds of the new taxon appear in Table 1. Examination of feather wear and moult pattern (primary-coverts juvenile-retained) suggest that the holotype is a first-winter (Figs. 6–7).

Other specimens.—Another specimen of O. l. warriae is also held at BMNH, a presumed young female (short wing, overall browner hue to the black feathers, and reduced white in the remiges) from the Gould collection (BMNH 1881.5.1.933), which lacks a date and is labelled simply ‘Egypt’. Because of the lack of good-quality locality or other data associated with this specimen, we refrain from assigning it paratype status. As noted by Tye (1994), Gould’s localities are not always correct, but warriae has recently been photographed in Egypt (S. Baha El Din in Demey 2011), and this taxon may regularly disperse some distance (see below). Three additional specimens, of which two were described by Andrews (1994), are present in two Jordanian museums, but they have not been examined by us and are not assigned paratype status here. Nevertheless, we included measurements from the two birds detailed by Andrews (1994) in our analysis (Table 1) and studied photographs of one of them in Andrews (1994).

Additional material examined / field work.—We examined specimens of the entire O. lugens complex (halophila, lugens, warriae, persica, lugeutoides, boscaewui, lugubris, vauriei and schalowi) at BMNH and the American Museum of Natural History (AMNH; New York). In particular, we studied variation in nominate lugens and persica at BMNH (see Table 1), but HS also studied 32 specimens mostly assigned to nominate lugens and which could be aged and sexed, in Tel Aviv University Zoological Museum. We have studied the following taxa in the field: halophila (GMK, in Morocco), lugens (GMK & HS, in Israel), warriae (HS in Jordan), lugeutoides (GMK, in Yemen), boscaewui (GMK, in Oman and Yemen), lugubris (HS, in Ethiopia) and schalowi (HS, in Tanzania). Detailed field observations of warriae in Jordan involved 12 birds in 2000 and 17 in 2001, in the basalt desert roughly between Safawi and Ar Ruwayshid. To better understand individual (and age / sex) variation, especially the development of the white remiges pattern in nominate lugens dedicated field work was conducted in Israel’s Negev Desert in October 2011. Forty-two individuals were observed, of which 11 were photographed in the field and 12 in the hand.

Description of holotype.—Colour names and numbers follow Smithe (1975). Between Colors 119 (Sepia) and 82 (Blackish Neutral Gray) over the head, neck, mantle, scapulars, upper back, and throat to lower belly, including the thighs, with bluish sheen that is strongest on the upperparts (none of the O. l. lugens examined show this as strongly or as extensively; at most slightly on scapulars and lesser coverts). Wings between Colors 119A (Hair Brown) and 219 (Sepia), but the longest and shortest tertials are new, adult-like, and approach the colour of the rest of the upperparts. Greater coverts closest to Color 219 (Sepia). Subterminal tail band and r1 same colour as the wings, but r2 on the right side of the tail and r3–5 on the left side are new, adult-like and approach the rest of the upperparts in colour. White tips to the retained juvenile primary-coverts. Very narrow whitish-grey bases on the inner webs of the primaries, with very steep penetration to the bases of these feathers. First primary (p1) relatively short (about equal to the primary-coverts) and all dark greyish on the underside (all nominate O. lugens invariably have 25–75% of the inner web bright white at the base or the tip). Adult males of warriae also have the underside of p1 grey. Underwing-coverts as body, contrasting with the rest of the underwing, which is off-white. Emargination on pp3–5, and shallowly and short on p6. Rest of plumage (rump, uppertail-coverts and remainder of tail) is white; the undertail-coverts are essentially also white, but some feathers are partially washed pale sandy-cream (visible in certain light / angles).
TABLE 1

Measurements of Oenanthe wheatears, principally specimens (held at the Natural History Museum, Tring, unless specified otherwise) but also two live birds trapped in Jordan by HS & AJH. All specimens measured by HS & N. Cleere, except two at the Jordan Museum of Natural History (Yarmouk Univ., Irbid) from Andrews (1994). Wing = flattened chord; tail-band = subterminal area of black, measured along shaft of outermost rectrix from below; rump patch = area of white on rump / uppertail-coverts, measured from below furthest extent of black on lower back (where border between them is solid) to longest white uppertail-coverts; and all other measurements based on standard protocols of Svensson (1992). All specimens sexed and aged by the authors, but only sex is shown, as morphometrics of Oenanthe do not differ with age (HS pers. obs.). For remarks concerning the sex / age of the ‘Egypt’ specimen of O. l. warriae see the main text. Figures below each sex class show mean (in bold) plus range (in parentheses) and standard deviation (±). We could not determine to which taxon the two Syrian specimens belong (see Further research), but have treated them separately. No mean or range is shown as only one specimen of each sex was available.

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**n=12**

<table>
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<tr>
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<th>hindclaw</th>
<th>bill to skull</th>
<th>bill to feathers</th>
<th>depth at rear nostrils</th>
<th>rump patch</th>
<th>pc&lt;sp1</th>
<th>pc&lt;sp2</th>
<th>p2#</th>
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**sd = 2.583** **sd = 2.061** **sd = 2.641**

**sd = 1.212** **sd = 0.513** **sd = 0.836** **sd = 0.583** **sd = 0.144** **sd = 4.922** **sd = 2.225** **sd = 1.953**


Diagnosis.—Readily distinguished from the rest of the *O. lugens* complex by the lack of any deep buff, peachy to pale orange-rufous coloration on the undertail-coverts, which feature characterises all of the other taxa mentioned above. The undertail-coverts are essentially white or dusky white, but often tinged sandy cream or grey, apparently due to discoloration by the local soil. Nevertheless, even in such birds, this sandy hue is never extensive or as contrastingly peachy orange as in *O. l. lugens*. The almost completely black plumage, without any pale feathers on the crown, nape or underparts, provides a further obvious distinction from the rest of the complex. Further, the amount and pattern of white in the remiges are an important taxonomic distinction across the *lugens* complex. The pattern of white in *warriae* is very different from that in all ages of nominate *lugens*, and only superficially closer to *persica* (Appendices 1–2). Despite the limited sample for *warriae* compared to *O. l. lugens*, the geographically most proximate taxon, morphometric differences appear rather significant, namely the longer wing and tail (c.5% longer and virtually no overlap in males: Table 1) but shorter bill (c.2.5% with extensive overlap), and the distinctly smaller white rump / uppertail-coverts patch but broader black subterminal band (in both latter 30–40% differences and no overlap with *O. l. lugens*). These last two features are significant in *Oenanthe* taxonomy, playing major roles in display / territory signalling. The much shorter distance between the primary-coverts and first primary (p1, the outermost), but considerably longer distance between p1 and p2, provide further means of separation, at least in the hand, and some of these mensural characters also apply *vis-à-vis* other populations of *O. lugens sensu lato*. See Table 1 and Figs. 6–9.

Morphometric data, both those published here and those recently presented by Förschler et al. (2010: 764), suggest that *warriae* is closest to *O. l. persica*, and a detailed study of the ecomorphology of *warriae*, like that conducted by Kaboli et al. (2007) for many other wheatears, might prove interesting. *O. l. warriae* to some extent approaches North African *O. l. halophilae* in that males of the latter have reduced white in the remiges and paler buffish undertail-coverts. Moreover, *warriae* has a small white rump like males of the southern Arabian *O. lugentoides* (adult males also share a rather similar white pattern in the primaries, and both taxa have dusky-coloured juvenile plumages); the molecular relationship of these two has not been compared, cf. Förschler et al. (2010). *O. l. warriae* and *lugentoides* broadly occupy the northern and southern ends of the Arabian Plate, respectively, while their
white rump and remiges patterns closely recall *O. lugubris* of the East African Rift Valley. However, within the context of *O. lugens* sensu lato, *halophila*, *lugentoides* and *lugubris* are all sexually dimorphic. *O. l. warriae* is intermediate between the monomorphic and truly dimorphic taxa in the complex, especially in wing pattern compared to *O. l. lugens*, and with experience most birds can be sexed if correctly aged (see Appendix 1). Further, Khoury et al. (2010) also found that *warriae* has a distinctive dark juvenile plumage. The longer, more pointed wings of *warriae* suggest that it undertakes substantial post-breeding dispersal, which correlates with records in south-east Turkey, south Israel (for both see Distribution, habitat and conservation), and Egypt (see above). This dispersal resembles *persica*, but is unlike nominate *lugens*, which disperses only short distances, including altitudinally (Shirihai 1996, Khoury et al. 2010).

In the field, separation of *O. l. warriae* from male Variable Wheatear *O. picata opistholeuca* (which is often relegated to morph status in the literature; see discussion under Taxonomic rank) is extremely difficult. Both BMNH specimens were formerly treated as this taxon, until Tye (1994) elucidated their true identity. However, *contra* Tye (1994), both specimens are young females, aged and sexed by the combination of spotty white (juvenile-retained) primary-covert tips, the less intense black plumage (even slightly brownish-tinged in the Egyptian specimen) and especially the very limited greyish white on the inner webs of the remiges. They thus hardly differ from male *opistholeuca* in wing pattern. Adult *warriae*, especially males, possess more white on the inner webs of the remiges (almost comparable to *persica*: cf. Figs. 10–11 vs. Fig. 18) than in any male *opistholeuca*. However, the pale panel is hardly visible in flight in young birds, especially females (e.g. Figs. 13, 14 and 16), being much like *opistholeuca*, meaning that separation must focus on structural characters. And *vice versa*, male *opistholeuca* can be excluded using this feature only if compared to an adult male *warriae*. Any vagrant *warriae* or male *opistholeuca* will require full documentation with photographs and, preferably, an in-the-hand examination of the wing (see below).

In general, *opistholeuca* has a proportionately longer tail, affording it a slimmer appearance than *warriae*, broader spacing between the primaries, and the wingtip (pp3–4) usually shows only four obvious primary tips beyond the bunched secondaries, with a notably shorter distance between them and p7. In Basalt Wheatear, however, usually five closely spaced primary tips are visible (apart from the wingtip), and the distance between p7 and the secondaries is wider. These differences appear consistent and are the best means
to separate the two taxa, but only if the birds’ plumage is not heavily worn or in moult. A supporting character is the tail-band, averaging slightly broader in *warriae* and more even on both webs of r6, but in *opistholeuca* narrower and tends to be less even, with dark on the outer webs averaging longer still, forming a pattern recalling Pied Wheatear *O. pleschantka* or Black-eared Wheatear *O. hispanica*. Due to its shorter tail and longer wings, in Basalt Wheatear the distance between the wingtip and the proximal edge of the tail-band is usually shorter. The plumages of the two taxa, in general, are surprisingly similar, but *warriae* tends to have the black lower belly more clearly demarcated from the white undertail-coverts, whereas in *opistholeuca* the border is more diffuse, with more white feathers admixed and usually reaches the undertail-coverts at the sides, leaving a paler central area; however, there is overlap due to individual variation. The juvenile primary-coverts of *warriae*, like all *O. lugens sensu lato*, possess broader whitish tips (bolder and concentrated on the tips of the inner webs) with indistinct narrow fringes to the outer webs, which with wear become a line of spots (again, more distinct on the inner webs). In young male *opistholeuca* the tips / fringes are more even, extend further along the edge on the outer webs and do not form a spotted pattern with wear (cf. Figs. 2 and 19 of *warriae* vs. Fig. 21 of male *opistholeuca*). On landing, *opistholeuca* frequently engages in deep bobbing, whereas such behaviour is infrequent and less obvious in *O. lugens*, but individual variation probably renders this of limited use. In the hand, *warriae* can be separated by wing formula: p2 = p5/6, with emarginated pp3-5 (none or very indistinct on p6); in *opistholeuca* p2 = p6 or 6/7, with emarginated pp3-6 (the vast majority have clearly emarginated p6, but in some this is rather indistinct; Shirihai & Svensson in press). Further, in *warriae* the p1 falls about level with the tips of the primary-coverts (p1 > pc, mean 0.6 mm; Table 1), whereas in *opistholeuca* it usually is much longer (p1 > pc 2.5–7.5 mm, mean 4.9 mm; Shirihai & Svensson in press, Shirihai et al. in prep), which sometimes can even be detected in the field (compare Figs. 20 and 21).

Separation of *warriae* from White-crowned Wheatear *O. leucopyga*, which also occurs in eastern Jordan, to where it has apparently spread recently (Andrews et al. 1999, Khoury et al. 2010), is easier, even for individuals that are wholly or largely black-crowned (mostly first-years), using tail pattern, as in *leucopyga* it is almost always only / mostly the central rectrices that are black. Very rarely *leucopyga* develops a complete, inverted black T shape pattern on the tail, like *opistholeuca* and *warriae*, but remains diagnostically strongly glossed and is a larger bird. The geographically distant Black Wheatear *O. leucura* (Iberia and north-west Africa) is also difficult to separate from *opistholeuca* and *warriae*, but is distinctly larger and more heavily built, and its wing structure very different, especially the considerably shorter primary projection but longer p1 (Shirihai & Svensson in press). With hindsight, the lack of knowledge of Basalt Wheatear has caused it to be misidentified as all the above taxa, including the type specimen and the first two Israeli records (see p. 286).

No published analysis of vocalisations is available, although HS noted, during his observations in 2000–01, that the song of *O. l. warriae* is more complex, overall lower pitched, albeit with higher warbling sounds admixed, and lacks some of the deep fluting notes of *O. l. lugens*. These conclusions require more detailed study that should include the undescribed vocalisations of *O. l. persica*. Colour illustrations or photographs of the new taxon appear in a number of works, notably Andrews (1994, 1995: Plate 27), van der Vliet & Lange (1997), Andrews et al. (1999: 29; a leucistic bird), Boon (2004: 230), Collar (2005: Plate 80), Balmer & Murdoch (2009: 218), Svensson et al. (2009), Khoury et al. (2010) and Porter & Aspinall (2010: 311).

**Distribution, habitat and conservation.**—As a breeder *O. l. warriae* is found almost exclusively in the basalt deserts of eastern Jordan and southern Syria (Fig. 22). Its range reaches as far south and west as the near environs of Azraq, Shaumari and Umari in Jordan (Clarke 1981, Andrews 1994), perhaps east to Jabal Aneiza on the border between Jordan,
Figures 10-15. Age and sex variation in Basalt Wheatear *Oenanthe lugens warriae*, between Azraq and Ar Ruwayshid, Jordan, April 2000 (Hadoram Shirihai). Left three images (Figs. 10-12) of an adult male and right three images of a first-summer female (Figs. 13-15) (measurements of these birds are in Table 1). Note the blacker-blue gloss to the adult male, which can be aged by the lack of any strong moult contrast in the wing, the strongly textured and uniformly black adult remiges, primary-coverts and tail, whilst the primary-coverts lack any white tips. The young female is less glossed and somewhat browner on the dark areas, with worn and bleached, juvenile-retained remiges and primary-coverts; the latter also possess white spots on their tips. The adult male has broader and purer white inner webs, visible on both surfaces, which are either reduced or lacking in the young female. The white on the inner webs does not reach the shafts, but does reach the base of the feathers, while the first primary is very short, and the broad black tail-band makes *warriae* closer in morphology to *O. l. persica* than to the geographically proximate *O. l. lugens*. These and other plumage features, especially overall coloration, make this taxon virtually identical to male Variable Wheatear *O. p. opistholaena*, especially first-summer female *warriae* which lack, or almost lack, the white upperwing panel. Only two diagnostic characters separate first-summer female *warriae* from male *opistholaena*: the more pointed wingtip and longer primary projection with more evenly spaced primary tips and one extra visible primary, and the spotty white tips to the post-juvenile primary-coverts in Basalt Wheatear.
Iraq and Saudi Arabia (Tye 1994; see holotype), although its main range in Jordan probably reaches no further east than around Ar Ruwayshid. In the north and east it enters Syria as far as least as Jabal Sis (33°18′N, 37°22′E), south-east of Damascus (Macfarlane 1978, Baumgart et al. 1995). Further north, in the central Syrian desert, around Palmyra (34°33.196′N, 38°17.15′E), only more typically plumaged Mourning Wheatears are present (Serra et al. 2005), though see below. Its Jordanian range was mapped in Andrews (1994, 1995).

Although the ex-Gould collection specimen labelled ‘Egypt’ cannot be taken alone as proof that O. l. warriae performs longer-distance dispersal, there is another, far more recent claim (not yet assessed by the Egyptian records committee), a bird photographed at Shalatein, on 2 December 2010 (cf. Demey 2011). Records also exist from Israel, in December 1982 (E. Doverat), February 1986 (HS) (these two records were misidentified as Black and Variable Wheatears, respectively; Shirihai in prep.), December 1994 (Shirihai 1996), December 2004 (J. P. Smith & Y. Perlman: Fig. 19) and January 2010 (U. Makover) and, even more remarkably, one in south-east Turkey apparently nesting with a female Finsch’s Wheatear O. finschii in spring 2011. In this context, a recent molecular study uncovered evidence of a close relationship between O. finschii and O. lugens (Aliabadian et al. 2007). Most observers resident in Jordan and Syria for longer periods have suggested the existence of short-range movements in the post-breeding season (e.g., Macfarlane 1978, Khoury et al. 2010). None of these extralimital records should be taken as evidence for warriae being a morph. Its long wing further hints at the possibility of regular migratory movements, and all confirmed records away from the basalt desert to date have involved young birds. The recent Turkish record is the only evidence of warriae breeding away from a clearly circumscribed geographical region, and then only as a hybrid pairing with O. finschii and outside of the range of the O. lugens complex.

Concerning habitat, O. l. warriae is apparently restricted to outcrops of Al Harra basalt flows (Andrews 1994: 34), but is ‘generally absent from the featureless, rolling, boulder fields’, being most frequently seen in areas of ‘road cuttings, boulder piles and abandoned telegraph poles in addition to natural bluffs and the sides of wadis’ (Andrews 1994: 34; see also Figs. 3–4). Mean annual precipitation here is just 50–250 mm, and the wheatears prefer hills and escarpments with steep slopes and high rock cover for breeding, but visit more level ground for forage, including the sides of tarmac roads (Khoury et al. 2010). They share the basalt desert with another unusually dark taxon, the Desert Lark Ammomanes deserti annae R. Meinertzhagen, 1923 (Fig. 5). The current status of O. l. warriae in Syria is

Legends to plate on p. 283

Figure 16. First-summer male Basalt Wheatear Oenanthe lugens warriae, southern Syria, February 2009 (Nicolas Martinez): note combination of worn, browner primaries, forming moult contrast with the secondary-coverts, and juvenile-retained primary-coverts with still some, very tiny, whitish tips, as well as blacker-blue gloss to the dark feathers. The lack of visible white on the inner webs of the remiges (even on the stretched wing) confirms that it is a young bird, and thus cannot be separated using this feature from male Variable Wheatear O. picata opisthopleuca. Compare with adult male warriae (Fig. 10) which has visible white on the inner webs of the remiges.

Figure 17. Mourning Wheatear Oenanthe lugens, southern Israel, July 2008 (Amir Ben Dov). Nominate race cannot be sexed (male-like plumage occurs in females), but the uniform adult remiges, primary-coverts and tail age this bird as an adult (that has just ended its annual complete post-breeding moult). Note that unlike both O. l. warriae and O. l. persica, the white on the inner webs of the remiges reaches the shafts.

Figure 18. Mourning Wheatear with Oenanthe lugens persica-like characters, Palmyra, southern Syria, February 2009 (Nicolas Martinez). Note especially the persica-like narrow white patches on the inner webs of the remiges that do not reach the shafts, and the broad black tail-band. The latter makes O. l. persica and warriae closer in morphology to each other, than to O. l. lugens. Note also the evenly feathered wing (especially the lack of juvenile-retained primary-coverts), which confirms the bird is an adult and that the regimes pattern is not that of a young lugens. Because O. l. persica is migratory, such birds could have been wintering away from their usual winter range.
Figure 19. First-winter male Basalt Wheatear *Oenanthe lugens* *warriae*, Arava Valley, southern Israel, December 2001 (Yoav Perlman), showing the white undertail-coverts and the diagnostic white-spotted juvenile-retained primary-coverts and alula (only tiny white spots remain on their tips due to wear, but they are still fundamentally bold and concentrated on the tips to the inner webs).

Figure 20. First-summer male Basalt Wheatear *Oenanthe lugens* *warriae*, southern Syria, February 2009 (Nicolas Martinez). Some young *warriae* could lose (through wear) the diagnostic white-spotted juvenile-retained primary-coverts and alula rather earlier in the spring. Such birds could be misidentified as adults, but note the clear moult limits between the juvenile-retained (browser) and post-juvenile renewed (blackish) greater coverts. They could be more easily confused as male Variable Wheatear *O. picata* *opistholeuca* (due to the lack of white in the remiges and white primary-covert spots).

Figure 21. First-summer male Variable Wheatear *Oenanthe picata* *opistholeuca*, Feyzabad, north-east Afghanistan, May 2010 (Frank Joisten), showing how this taxon has virtually identical plumage to Basalt Wheatear *O. lugens* *warriae*. This bird is aged and sexed by combination of its juvenile-retained remiges and primary-coverts, and the black coloration to the dark plumage tracts. Compared to *warriae* it can be separated by the proportionately shorter primary projection (fewer exposed primary tips) but relatively longer tail and narrow black tail-band (distance between the latter and the wingtip much longer than in *warriae*, although this can be reliably judged only in profile and certain stances). Also unlike *warriae*, p1 is longer than the primary-coverts, which if visible could be a critical field mark. Note the overall jizz is more Pied Wheatear *O. pleschanke*-like in *opistholeuca* than in *warriae*, which is more compact and less long-tailed looking. This male *opistholeuca* has some remnants of the pale tips to the primary-coverts, but these are diffuse and on the outer webs, rather than bold tips concentrated on the inner webs, as in *warriae*.

very poorly known, but recent field work in north-east Jordan suggests that it is very rare, perhaps even on the verge of extinction there, possibly as a result of recent droughts and through competition with *O. leucopyga*, which has recently colonised this region (Khoury et al. 2010). By formally naming the Basalt Wheatear, even at the rank of subspecies, our hope is that conservation bodies will take greater interest in this unusual bird.

**Etymology.**—It gives HS & GMK great pleasure to name this *Oenanthe* for Mrs Frances E. (‘Effie’) Warr, former Librarian at BMNH, and long-time stalwart of the Council of the Ornithological Society of the Middle East. This association makes the naming of the new taxon in her honour especially appropriate. Over many years, she has provided innumerable ornithologists with countless courtesies. She is one of the unsung, backroom heroes of modern ornithology. The specific name *warriae* is a noun in the genitive case formed under Art. 31.1.1 of the ICZN (1999) Code, wherein the name Warr is Latinised. As regards its vernacular name, Basalt Wheatear has been in widespread ‘unofficial’ use for well over a decade, and we advocate its retention.

No previous name is available for the basalt population. Although Förschler et al. (2010) alluded to it as ‘basalti’, this name is a *nomen nudum* because its initial use cannot be considered a valid nomenclatural act according to the *International code of zoological nomenclature* as, for example, no type specimen was nominated and no type description published (ICZN 1999, Arts. 13.1.1, 16.1, 16.4 and 72.3). We searched extensively for a previous name that might be applicable to this population, commencing with the synonymy of various *Oenanthe* taxa in Seebohm (1881) and including those names applied by the early German explorers of the Middle East and north-east Africa. Most interestingly, the type
of *Oenanthe leucura syenitica* (Heuglin, 1869), actually represents a taxon from the *lugens* complex and has similar features to *warriae*. However, all of the morphological evidence points to it being a different taxon (e.g., overall size, wing formula, tail-band width), especially as it was collected in June in either Egypt or Sudan.

**Taxonomic rank.**—Unlike Förschler et al. (2010) and Khoury et al. (2010), who were apparently in ‘two minds’ as to whether taxonomic status for the basalt population was warranted, we believe that it clearly is. Its position is unique. Morphometrically, this form groups with *O. l. persica*, a taxon ranked as species by Förschler et al. (2010). Yet clearly it cannot be considered a colour morph of the latter, especially given its genetically near-identical profile to *O. l. lugens*. Moreover, treating the basalt population as a colour morph is dubious given that it is both geographically circumscribed and lacks a morphological character found in all other populations of *O. lugens sensu lato*, i.e. the rufous-tinged undertail-coverts, unlike the black morph of *O. lugubris*, in which the undertail-coverts maintain the distinctive coloration (polymorphism in this taxon went unrecognised until the work of Vaurie 1949: 27–28).

Here, *O. l. warriae* is conservatively treated as a subspecies under a modern interpretation of the Biological Species Concept (e.g., Helbig et al. 2002), although we note that its plumage, mensural and other characters might, in combination, be sufficient to accord it species rank under the guidelines recently developed by Tobias et al. (2010; see Appendix 3). Analogously, Ticehurst (1922), Haffer (1986) and Panov (1992, 2005) rejected the concept that the three plumage types in *O. picata* represented colour morphs as espoused, for example, by Vaurie (1949), Ripley (1964), Cramp (1988), Collar (2005) and others, instead considering them to be valid taxa, a view that we find persuasive. That *O. l. warriae* is a colour morph of *O. lugens* is unlikely because this nearly all-black form is geographically restricted as a breeder to the basalt deserts of north-east Jordan and southern Syria (Andrews 1994, 1995), and intermediates or mixed pairs with *O. lugens* have not been observed to date (Andrews 1994). Tye claimed broad overlap and the existence of mixed pairings, but he lacked relevant field experience. Moreover, the unique characters of the basalt form appear to be stable, most importantly the lack of rufous on the undertail-coverts, judged by all published observations. Observers with experience of *O. l. warriae* have found little evidence of overlap and none of hybridisation, with typical-plumaged Mourning Wheatears and Basalt Wheatears apparently selecting different substrates (Andrews 1994, Khoury et al. 2010; HS & AJH pers. obs.). Khoury et al. (2010) found that juvenile plumage is also unique (although their sample size is not stated), providing further strong indication of the taxonomic validity of *O. l. warriae*. However, both our own unpublished genetic data and those of Förschler et al. (2010) indicate that variation in the *O. l. lugens / O. l. warriae* clade is just 0.2–0.3% in mtDNA and they are not diagnosable using barcoding methods. Thus we prefer to await further molecular and vocal data, and to test the potential biological significance of, for example, the very small white rump patch of *O. l. warriae*, before considering whether species-level separation might be warranted. Nonetheless, it might be mentioned that Randler et al. (2011) found that the *O. hispanica–melanouleuca–cypriaca–pleschanka* complex is also genetically ‘uniform’, offering a potential parallel with the *warriae / lugens* situation. Randler et al. (2011) maintained species status for *O. cypriaca*, despite lack of genetic differences. It seems that in *Oenanthe*, morphometrics, plumage characters and vocalisations (using well-controlled playback experiments) are of even greater import for determining species status than molecules.

Finally, the close genetic relationship of Basalt Wheatear to *O. l. lugens* further confirms that it is not a disjunct population of *O. picata opistholecua* and, as described above, despite virtual identical plumage the latter differs clearly in measurements and wing formula from *O. l. warriae*. 
Given the obvious plumage and some biometric differences, but the lack of genetic differentiation between *warriae* and other members of the *lugens* complex, their ‘split’ is presumably rather contemporary and presumably rests on natural selection favouring a darker form in the basalt desert. However, especially fascinating is how *O. I. warriae* has developed virtually identical plumage to male *O. p. opistholecuca*. Finally, the entire genus *Oenanthe* requires additional genetic analysis, as many relationships remain unresolved, including between several very well-differentiated species/groups.

**Future research.**—Major handbooks (e.g., Vaurie 1959, Cramp 1988) suggest that Syria is inhabited by *O. I. lugens*, and that it is a very widespread breeder there. However, available material of Mourning Wheatears from Syria is too limited to determine which taxon breeds there. For example, at BMNH there are just two specimens from Syria—both assigned to ‘nominate’ *lugens* (1946.63.56 and 1905.10.11.18)—but these proved impossible to assign to subspecies using morphometrics (Table 1). Both are first-years with juvenile-retained remiges and their *persica*-like white pattern on the primaries is inconclusive for identification (see *O. I. lugens*, Appendix 2), while in biometrics they either approach one or other subspecies, or appear intermediate. We also examined photographs of live birds from Syria, mostly from Palmyra, which seem to possess typical *O. I. persica* characters, but these were mostly taken in winter (e.g., Fig. 18). Because *O. I. persica* is migratory, such Syrian records (dated December–March) could have been wandering away from their usual range in eastern Arabia. HS recently found several winter specimens showing classic *O. I. persica* characters collected in southern Sinai, Egypt and southern Israel (Tel Aviv University Zoological Museum; including three adult males, 9718, 9624 and 2296). This suggests that *O. I. persica*-like birds occur regularly at least as far as west as the Levant in winter. It remains to be elucidated which taxon breeds over much of Syria. Should field work prove that most or all breeders are *persica*-like, this would suggest one of three possibilities: (1) that *persica* breeds much further west than currently thought, (2) the presence of a variable and perhaps intermediate population between *lugens* and *persica*, or (3) an undescribed taxon in Syria. The origin of *persica*-like birds recorded wintering within the range of the nominate in Sinai, Egypt and Israel is unresolved. This is particularly interesting with respect to *O. I. warriae*, whose morphometrics and tail pattern are closer to *persica*. Field research is required to resolve this issue. For now, it appears premature to adopt the ‘borderline split’ of *persica* (1.2–2.2% divergence in mtDNA from nominate; Förschler et al. 2010) until the identification of *persica*-like birds in Syria is resolved, and their relationship to *persica* breeding in Iran, as well as to *O. I. lugens* and *O. I. warriae*, have been more fully investigated employing molecular, vocal and additional morphological data.

**Acknowledgements**

This paper is dedicated to two ‘*Oenanthe* heroes’. Firstly, the late Gideon Zakkai (Gidi), friend of HS and pioneering researcher into the biology of *O. I. lugens* in the Negev Desert; he was also closely involved with the development of breeding in Israel. Secondly, the late Andreas J. Helbig, who sadly died before he could complete his work with HS on a planned wheatear monograph. All three of us collaborated on the already published *Sylvia* monograph (2001). HS remembers well his work with Andreas on *warriae* in Jordan, *lugubris* in Ethiopia, and searching for Somali Wheatear *O. phillipsi* in remote Ethiopia. His rare talent united pioneering molecular work with a passion (never lost) for field study. Helbig played an important role in the groundwork for this paper and he supported its central conclusion; we are pleased to include him as a co-author in recognition of this. Nigel Cleere assisted HS to measure *O. I. persica* at BMNH. Many people associated with the Ornithological Center in Israel, particularly Dan Alon, supported HS’s field work over many years, including some of his wheatear studies. Maria San Román and Eyal Shochat assisted HS to study variation within *O. I. lugens* in the Negev Desert in October 2011. Andrew Grieve helped prepare the table, Rene Pop prepared many of the figures from slides, and Magnus Ullman, our cartographic collaborator in the forthcoming *Handbook of Western Palearctic Birds*, very kindly prepared the fine map at short notice. The following photographers provided images of Syrian birds: Nicolas Martínez, Tomas Haraldsson, Rob Gordijn and Klaas van Haeringen. Emin Yögurtçuoğlu sent photographs of the Turkish Basalt Wheatear. Thanks also to Amir Ben Dov, Frank Joisten and Yoav Perlman for permitting use of their images here. We express, once
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**Appendix 1: ageing and sexing Basalt Wheatear**

We analysed all available *O. l. warrine* specimens or photographs, as well as trapped birds (see Table 1) and found that *warrine* shows clearer sexual differences than *O. l. lugens*. At least some can be reliably sexed if correctly aged first (by moult and feather wear / wing pattern, and pattern of the primary-coverts), combined with general plumage pigmentation, amount of white on the inner webs of the remiges (especially the primaries) and some biometrics (Table 1). *O. l. warrine* seems to undergo a complete post-nuptial moult (adults), while juveniles undertake a partial post-juvenile moult, in late summer / early autumn. Post-juvenile renewal includes the entire head, body, lesser and median coverts, most or all greater coverts, and usually some tertials and alula feathers; replacement of some rectrices appears irregular. Pre-nuptial moult seems absent or limited, though some spring birds have very fresh secondary-coverts and tertials that had apparently been renewed recently. Plumage and seasonal variation is as follows: 

**Spring Adult** Generally less worn, or quite fresh until April, especially the primaries which are also blacker. Wings also lack any obvious moult limits or other vestiges of immaturity (cf. first-summer). Adult ♀ has black areas generally duller, less strongly glossed metallic blue and purple as in adult ♂, and extent of white or pale grey in remiges reduced (adult ♂ has clear-cut and purer white on the inner webs—Figs. 10–11). **First-summer** Aged by more worn, browner, retained juvenile remiges, and primary-coverts, most of which usually still show the diagnostic small white tips, at least until April. Both sexes correspondingly less intensely glossed, with black areas of especially young ♀ ♀ even browner. Juvenile remiges have reduced white or pale grey, and especially young ♀ ♀ lack any visible white on inner webs of open upper wing (Figs. 13–14). Some first-summer ♀ ♀ also lack visible white on the spread upper wing, but most have some visible, even approaching that in adult ♀ . 

**Autumn Adult** Evenly very fresh wings without discernible moult limits; primary tips fresh or, at most, slightly worn, and primary-coverts only slightly worn, blacker and glossier, and lack bold white tips of first-winters. Plumage and amount of white on inner webs to remiges generally as spring adults. 

**First-winter** (Fig. 19) Similar to adult, but has diagnostic bold white tips to primary-coverts, while those with retained juvenile alula and tertials also have contrasting bold white tips (reduced with wear). Slightly to moderately worn pale primary tips, and moult limits with less intense black (or browner) and looser juvenile greater coverts (if retained). Rest of plumage and amount of white on remiges generally as first-summers. 

**Juvenile** Very distinctive compared to juvenile *lugens* or *persica*, being generally smoky and browner overall, with grey-brown upperparts and dusky buff-brown underparts, often with darker or even blacker ear-coverts and bib, and warmer buff wing fringes (see Khoury *et al.* 2010).

**Appendix 2: summary of geographical variation in Mourning Wheatears of North Africa and the Middle East**

Geographical variation in those members of the *O. lugens* complex breeding in North Africa and the Middle East (excluding southern Arabia) is marked. All the following taxa are consistently identifiable, with no
Figure 22. Distribution of the Oceanites lugens complex in North Africa and the Middle East (excluding southern Arabia) (Magnus Ullman) showing breeding ranges and some movements, and with approximate boundaries between subspecies (broken lines). Considerably uncertainty and gaps in our knowledge exist meaning that some elements of the map should be viewed as tentative. Green = breeding; blue = wintering; arrows depict possible direction of migration by O. l. persica. The range of O. l. wariae is marked in red on the main map (enlarged at left) and is roughly based on the few published records, together with knowledge of its habitat requirements.

Notes. (1) Large ‘?’ in Syria reflects the confusion surrounding which taxon breeds there; traditionally, this has been assumed to be O. l. lugens, but we have found evidence that O. l. persica occurs there, although its temporal status is unclear (see Future research). (2) Small ‘?’ in eastern Lebanon: Porter & Aspinall (2010) indicated that the range of O. lugens covers most of Lebanon to the Mediterranean coast, but this seems erroneous (perhaps reflecting former confusion with Finsch's Wheatears O. finschi). However, in the drier areas of easternmost Lebanon, lugens could breed or occur in winter. (3) Arrows mark possible dispersal of O. l. persica, but only the Iranian population is known to be migratory, mostly to eastern Arabia. We have found evidence to suggest that persica winters west to Israel and Sinai (several specimens in Tel Aviv University Zoological Museum). It is unclear if these are from Iran (see note 1). (4) Border between O. l. halophila and O. l. lugens in Egypt remains to be elucidated. Extensive research in the area from the Nile to eastern Libya is needed, to elucidate whether intermediate populations of these two distinctive taxa exist as claimed.

documented evidence of possible overlap or interbreeding. For now, the four are conservatively maintained as subspecies, until such time as definitive evidence of specific status for some or all taxa becomes available. The following is based on specimens at BMNH, AMNH and the Tel Aviv University Zoological Museum, and summarises information prepared for Shirihai & Svensson (in press), Shirihai et al. (in prep.) and Roselaar & Shirihai (in prep).

The most useful characters are the degree of sexual dimorphism, pattern and extent of white in the remiges, the extent of the buffy/rufous undertail-coverts, the size of the white rump, and the existence of polymorphism (only obvious in female halophila). To some degree the forms are also differentiated by biometrics and wing formula. See also Fig. 22 for further details concerning the distribution of each taxon.

**O. l. lugens** (eastern Egypt, north-west Saudi Arabia, Israel and Jordan, but the taxon in Syria requires further investigation—see Further research), like O. l. persica (but unlike O. l. halophila) both sexes are virtually identical and black and white; the pinkish-buff to rufous undertail-coverts and whitish wing panel are well developed. In adults, the white bases to the inner webs are broad and reach closer to the shafts, and the border with the dark fields less steeply angled (more step-like on p2 and p3 closer to the shaft, at least 10 mm above primary-coverts), forming more solid white flashes (Fig. 17). However, considerable age-related variation exists, with first-years having, on average, narrower white bases that often do not reach close to the shafts and can even lack the step-like pattern, to the extent of appearing identical to persica in this respect. Females, of respective ages, have on average smaller areas of white, but variation renders this unreliable for sexing. Reliable separation of lugens vs. persica outside the breeding season / regions should hinge on the white wing pattern only in adult males and use other clues, e.g. tail-band width and wing length, as well as p1 in relation to the tips of the primary-coverts and p2 (see Table 1). Exposed white base to p1 rather extensive and usually well defined. Wing 94–98 mm (n = 10, mean 96.1); 89–94 mm (n = 6, mean 90.8); tail 61–68 mm (n = 7, mean 64.6), 58–62 mm (n = 4, mean 58.6); bill (both sexes) 17.6–19.7 mm (n = 25, mean 18.45).

**O. l. halophila** (Morocco to north-west Egypt, although permanent breeding range in north-west Egypt requires confirmation) is unique within the group in showing strong sexual dimorphism, with females being generally duller grey-brown (resembling female O. finschi), but males are black and white (for rare darker females, see below). Pinkish-buff undertail-coverts and whitish panel in wing strongly reduced compared to
O. i. lugens. Colour of undertail-coverts patch highly variable in both sexes, from pinkish white or cream-buff to pale orange / rufous-buff, whilst white flashes raged, concentrated on secondaries and inner primaries, and narrower (on inner webs usually not reaching shafts). Wing $\sigma$ 89–97 mm ($n = 17$, mean 91.8), $\varphi$ 85–90 mm ($n = 14$, mean 87.8); tail $\sigma$ 54–63 mm ($n = 17$, mean 57.9), $\varphi$ 54–60 mm ($n = 14$, mean 56.5); bill (both sexes) 17.1–19.3 mm ($n = 31$, mean 18.3). Females can show a dark throat, and are highly variable in darkness of neck-sides and wings, with some extremely dark birds perhaps only sexed correctly by their greyish-brown back. Forschler et al. (2010) found rather low genetic divergence (0.2–1.0%) between nominate lugens and halophila, suggesting their retention together. Guichard (1955) reported that of four females collected in Tripolitania, Libya, one was typical pale halophila, while the second was mainly male-like, while the fourth seemed intermediate between male and female plumage. Apparently similar intermediates reported from Egypt by Baha el Din & Baha el Din (2000), who also reported birds with halophila-like plumage but with extensive white in wing like O. i. lugens. However, neither of these references acknowledges the extreme variation in female halophila described above. Baha el Din & Baha el Din (2000) confirmed the lack of overlap in breeding ranges of halophila and lugens in Egypt, which are separated by the Nile (and even suggested that they favour different habitats). O. i. halophila is constant in its plumage characteristics and clear sexual differences exist across its range. Vocaly, too, halophila and lugens clearly differ (Shirihai & Svensson in press).

O. i. persica (north-east Iraq and Iran) is essentially a migrant breeder, moving as far as south-west Arabia in winter, but is rather subtly differentiated from lugens, except by the following. Black tail-band broader, with width of black at shaft 14–23 mm, but mostly >17 mm (Table 1). White on bases of inner webs of remiges substantially reduced, narrow and pointed, separated very steeply from dark fields, with division on pp2–3 ending approximately in line with primary-coverts or well below this. Thus white bases never reach very close to shafts (or form ‘step-like’ pattern of lugens) on exposed primaries, and consequently has much more ragged white flashes in flight. (Beware of some variation in lugens; see above.) White bases to rest of remiges reduced, short, or often greyer and ill defined, and exposed white base on P1 small, ill defined or lacking. The black ‘bib’ tends to appear broader and may extend further onto the upper breast, while in fresh plumage the cap is often more brownish (sometimes almost dusky or blackish brown), but there is extensive individual variation in both these. Undertail-coverts similar to lugens or paler rufous, but much variation and overlap. Overall larger with more pointed wing. Wing $\sigma$ 89–98 mm ($n = 12$, mean 94.9), $\varphi$ 88–97 mm ($n = 11$, mean 92.2); tail $\sigma$ 59.5–65.0 mm ($n = 12$, mean 63.5), $\varphi$ 57–64 mm ($n = 11$, mean 60.5); bill (both sexes) 17.2–20.6 mm ($n = 23$, mean 18.8).

O. i. warrriae (north-east Jordan and southern Syria) is almost solely black above and below. The only white areas are rump, lower ventral region, upper- and undertail-coverts, and tail feathers except inverted blackish ‘T’. Latter pattern recalls previous two taxa, but subterminal band broad, approaching persica (14.5–19.0 mm wide along shaft of r6). Unlike any other member of the lugens complex it lacks rufous undertail-coverts, which are essentially white or tinged pale sandy cream, dusky white or pale greysish, probably due to soil discolouration. White rump patch very restricted, only $\frac{1}{5}$ to $\frac{2}{5}$ that of lugens, and only c. $\frac{2}{5}$ that of persica. Strongly reduced white in bases to remiges, but pattern generally approaches that of persica. Only in adult males, which have most white, is the amount substantial and visible though still narrow and at most forms ragged flashes in flight. In young, especially females, the white is absent or nearly so, with a greysish transulence in some lights. Thus, even in adult male warrriae the white areas are far narrower than in a young female lugens or than most persica. Wing more pointed, also approaching persica, including very short P1, which is dark greysish below (lacking white tip or basal area of other taxa). Virtually identical to male O. picata opistholenca (especially young females with no visible white in wing) and often reliably separated only using wing structure and formula. Wing $\sigma$ 97–99 mm ($n = 3$, mean 98.3), $\varphi$ 92.0–92.5 mm ($n = 3$, mean 92.2); tail $\sigma$ 64.5–65.0 mm ($n = 3$, mean 64.8), $\varphi$ 62–65 mm ($n = 3$, mean 63.2); bill (both sexes) 18.0–19.5 mm ($n = 6$, mean 18.5).

Appendix 3: O. i. warrriae assessed under the Tobias et al. (2010) guidelines

Tobias et al. (2010) established transparent guidelines for assessing species rank under a modern version of the Biological Species Concept. Readers are referred to that paper in considering the following. Conservatively, measured against geographically proximate O. i. lugens, O. i. warrriae might score for the black, rather than white, crown and belly (3), lack of buffish-coloured undertail-coverts (3), reduced white in the primaries and rump, but broader tail-band (2), different biometrics and wing formula (1), and habitat preferences (1), giving a total of ten points (i.e. above the threshold seven points considered necessary to assign species rank under the Tobias et al. 2010 system). This ignores potential differences in vocals, which remain to be accurately elucidated, and the possibility that lugens and warrriae occur in parapatry, as this is also undetermined. For now, we can be sure only that lugens and warrriae select different habitats and that inter-breeding must be unquestionably rare, given that there are no documented examples of mixed pairs between these two. Despite the results of this scoring, we have assigned warrriae subspecies rank in light of the fact that the taxonomy of the O. lugens complex requires further clarification, and due to its previous treatment as a colour morph.
The authorship and type locality of *Phalacrocorax carbo sinensis*

by Jiří Mlíkovský

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Great Cormorant *Phalacrocorax carbo* (Linnaeus, 1758) is a common and widespread polytypic species of the Palearctic fauna. The continental subspecies, ranging from Western Europe to east and south-east Asia, is generally known under the name *sinensis* (Vaurie 1965, Dorst & Mougin 1979, Orta 1992, Johnsgard 1993).

The specific name *sinensis* has been often attributed to Shaw & Nodder (1802), where it appeared in the Latin text accompanying their plate 529 (unpaginated) in the binomen *Pelecanus sinensis* (e.g. Dresser 1903: 555, Hartert 1920: 1390, Peters 1931: 87), although Giebel (1877: 84) had previously attributed it to Latham (1801: lxx), an earlier source. For the dates of publication of Shaw & Nodder’s work, see Sherborn (1895), Dickinson *et al.* (2006) and Peterson (2011). Sherborn (1924: 906) observed that the name had been used still earlier by Blumenbach (1798), in the text accompanying his plate 25 (unpaginated), also in the binomen *Pelecanus sinensis*. As a result, authorship has been widely accredited to Blumenbach in current ornithological literature (e.g. Vaurie 1965: 48, Dorst & Mougin 1979: 166, Dickinson 2003: 91). Dorst & Mougin (1979: 166) believed that *Pelecanus sinensis* of Blumenbach (1798) and of Shaw & Nodder (1802) were independent names and therefore homonyms.

I should also point out that *Pelecanus sinensis* of Turton (1800: 351) antedates Shaw & Nodder’s (1802) use of this name, but I have found no authority that attributes the name to Turton (1800).

My search of literature now reveals that the species was described still earlier than currently understood. Both Shaw & Nodder (1802) and Blumenbach (1798) referred in their descriptions to earlier sources. Shaw & Nodder (1802: English text accompanying pl. 529) referred to ‘Staunton’s Chinese Embassy, 2. p. 388’, and Blumenbach (1798: text accompanying pl. 25) described the bird ‘nach den Nachrichten [...] die in der prachtvollen Reisebeschreibung der neulichen englischen Gesandtchaft nach Schina [...] gegeben worden’. This, in translation, states: ‘on the basis of reports presented in the splendid travelogue of the recent English embassy to China’. In addition, Shaw (1809: 243) remarked that the species was ‘described and figured in Sir G. Staunton’s Embassy to China’. All of these citations refer to the Macartney Embassy, headed by George Macartney (1737–1806), British politician, which ran from 1792–94 (Robbins 1908, Cranmer-Byng 1958, 1962).

The official and most comprehensive travelogue resulting from the Macartney Embassy was written by George Staunton (1737–1801), Irish-born and French-educated British Jesuit priest, physician, naturalist and diplomat, who participated in the Macartney Embassy (Reed & Dematte 2007: 156). The work was published in 1797 in a two-volume quarto edition (Staunton 1797a,b) and a three-volume octavo edition (Staunton 1797c,d,e). In addition, a folio atlas (Staunton 1796), with 44 maps and plates, was published on 12 April 1796 (British Library 2011). See Cranmer-Byng (1962) for other first-hand accounts of this Embassy.

The atlas (Staunton 1796: pl. 37) contains a detailed, full-page drawing of a juvenile Great Cormorant, copies of which appeared both in Blumenbach (1798: pl. 25) and Shaw & Nodder (1802: pl. 529). Staunton’s pl. 37 bears the inscription ‘The Pelecanus [sic] sinensis..."
or Fishing Corvorton [sic] of China’ (my italics). The name appeared also in the chapter entitled ‘A list of plates contained in the folio volume’ in Staunton (1797b: xxvii), where it was accompanied by a detailed description, and in Staunton (1797e: 242) without description. A binominal name published before 1931 in association with an illustration is available for nomenclatural purposes (Art. 12.2.7 of ICZN 1999). The atlas was published prior to the text volumes of Staunton’s work (see above), and the specific name sinensis thus dates from that work in 1796.

Staunton (1797b: 388) published an account of the morphological characteristics of the cormorant (in quotation marks), describing the bird as ‘a species of the pelican, resembling the common corvorton’, not using a Latin name. He also attributed the species to Shaw, remarking that Shaw ‘has distinguished’ the form on the basis of ‘a specimen submitted [to him]’. ‘Doctor Shaw’, i.e. George Shaw (1751–1813), English naturalist and author of the Naturalists’ miscellany, thus may have suggested to Staunton that the cormorant brought by the latter from China was specifically different from the British cormorant and probably provided the morphological diagnosis. However, there is no evidence that he coined the name sinensis. On the contrary, the absence of this name from the book section where Staunton (1797b) published Shaw’s description and the fact that Shaw & Nodder (1802: Latin text associated with their pl. 529) stated ‘auctor est Dominus Stauntonus’ (‘the author is Mr Staunton’) indicate that the authorship of the name in the sense of the International code of zoological nomenclature (ICZN 1999: Art. 50.1) should be credited to Staunton.

Staunton (1796: pl. 37) published the specific name in combination with the generic name Pelecanus. He used the latter spelling also in another place in his travelogue (Staunton 1797b: xxvii), but there is no evidence that he deliberately emended the Pelecanus of Linnaeus (1758: 132). His Pelecanus should thus be considered an incorrect subsequent spelling, which, being not in prevailing use, has no standing in zoological nomenclature (Art. 33.3 of ICZN 1999).

The specimen ‘submitted’ by Staunton to Shaw (see above) can be regarded as the holotype of Pelecanus sinensis in the absence of any evidence to the contrary. Its current whereabouts is unknown and it has probably perished. Shaw’s bird collection was deposited in the British Museum of Natural History (now the Natural History Museum at Tring) (Steinheimer 2003: 54), but no matching specimen appears to have survived (Ogilvie-Grant 1898).

The type locality of Pelecanus sinensis was given simply as ‘China’ by Staunton (1796: pl. 37, 1797b: xxvii), Blumenbach (1798: text accompanying pl. 25) and Shaw & Nodder (1802: text accompanying pl. 529). ‘China’ has been listed as the type locality of P. sinensis in standard modern references as well (e.g. Vaurie 1965: 48, Dorst & Mougín 1979: 166). Staunton (1797a: 335, 1797c: 381) mentioned that the Macartney Embassy first briefly encountered cormorants (‘that celebrated bird, vulgarly called the pelican of the wilderness’) in the Turon Bay in Cochin-China (now Da-Nang Bay, Vietnam; c.10°06’N, 108°11’E). However, a more detailed account of cormorants is found in a section describing the voyage through the Grand Canal from Beijing south, when the Macartney Embassy crossed the ‘lake Wee-chaung-hoo’ (Staunton 1797b: 388 ff., 1797e: 242ff.), i.e. Lake Weishan. Staunton (1797b: 388, 1797e: 242) mentioned that this was ‘the place where the Leu-tze, or famed fishing bird of China, is bred, and instructed in the art and practice of supplying his owner with fish in great abundance’. I have found no other places in Staunton’s travelogue where cormorants were mentioned. Although direct evidence is lacking, I consider it highly probable that the holotype brought by the Macartney Embassy to Europe originated from this lake. Staunton’s (1797b,e) itinerary (see also Barrow 1804; John Barrow, 1764–1848, English politician, also participated in the Macartney Embassy to China) indicates that the
Macartney Embassy obtained the bird there in November 1793. Considering these data I restrict here the type locality of *Pelecanus sinensis* to Lake Weishan, Shandong Province, China (c.35°00′N, 116°50′E).

In summary, I conclude that *Pelecanus sinensis* was described by Staunton (1796: pl. 37) from a single specimen obtained by the Macartney Embassy to China in November 1793 at Lake Weishan, China. The subspecies authorship thus becomes *Phalacrocorax carbo sinensis* (Staunton, 1796).

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First description of the nest and egg of Orange-crowned Fairy-wren *Clytomyias insignis*, from the southern highlands of Papua New Guinea

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The fairy-wrens and allies (Maluridae) comprise an Australo-Papuan family of small to mid-sized, predominantly insectivorous, passerines that frequent shrubby vegetation, grasslands and forest undergrowth (Rowley & Russell 1997, 2007). Two subfamilies are recognised: the Malurinae (fairy-wrens and emu-wrens), with 17 species in Australia and New Guinea; and the Amytornithinae (grasswrens), with ten species confined to Australia (Rowley & Russell 2007, Christidis & Boles 2008). Members of this family are highly social and live in sedentary, multi-member groups that remain together year-round. Cooperative breeding, where more than two individuals contribute to raise the young at a single nest (Brown 1987, Cockburn 1998), has been confirmed in most species where sufficient data exist (Higgins et al. 2001, Rowley & Russell 2007). These communal habits have made them a favoured subject of research, with some *Malurus* fairy-wrens among the most intensively studied of all Australian birds.

The situation is altogether different in New Guinea, where basic information on the ecology and breeding biology of the island’s five endemic malurids remains piecemeal (Coates 1990, Rowley & Russell 2007).

The monotypic Orange-crowned Fairy-wren *Clytomyias insignis* is endemic to mainland New Guinea where it is widespread, albeit local and uncommon, in montane forest at 1,700–3,000 m (Diamond 1972, Coates 1990, Rowley & Russell 1997). It favours dense vegetation in the forest understorey or at the forest edge, where this fairy-wren gleans insects from foliage and feeds on the ground (Bell 1969, Diamond 1972, Coates 1990, Frith & Frith 1992).

Figure 1. Nest (A) and egg (B) of Orange-crowned Fairy-wren *Clytomyias insignis*, Hides Ridge, Southern Highlands Province, Papua New Guinea, April 2005 (Iain Woxvold)
Of breeding virtually nothing is known. *Clytomyias* has regularly been observed in groups of more than two (Frith & Frith 1992, Davies 2008), and sometimes in parties of up to seven birds (Bell 1969), consistent with the notion that it may breed cooperatively. Internal examination has indicated breeding condition in birds collected at various localities across the central cordillera (e.g., Mayr & Gilliard 1954, Ripley 1964), including a female that ‘contained two nearly formed eggs’ (Diamond 1972: 217). Here we provide the first description of the nest and eggs of *Clytomyias*.

In 2005 we surveyed birds on Hides Ridge (05°56.9'S, 142°44.7'E), part of a limestone range rising nearly 1,000 m above the Tagari River valley and located c.25 km west-southwest of Tari in the Southern Highlands Province of Papua New Guinea. Habitat consisted of primary montane *Nothofagus* moss forest overlying karst terrain with numerous sinkholes. Extensive thickets of climbing bamboo *Nastus productus* were present on hilltops and ridges.

On the afternoon of 25 April, while investigating a small (c.5 m diameter) swampy pool at the base of a sinkhole depression (at c.2,150 m), our attention was drawn to an area near the foot of the slope by a continuous series of harsh, scolding calls. Viewing the area from 5–7 m distance we noticed *Clytomyias insignis* at the entrance of a domed nest. Calling persisted for some minutes while the bird looked into but did not enter the nest, and then continued from within the nest after the bird had left. The calls were recorded and can be examined at xeno-canto (www.xeno-canto.org/asia/; XC64640). As we approached the nest, a second bird emerged and flew into the forest upslope.

The nest (Fig. 1A) was placed c.0.8 m above steep sloping ground in a shrubby vine *Parsonia sanguinea* situated c.2–3 m above the sinkhole floor and a similar distance from the forest edge at its boundary with the swampy pool. The nest framework was constructed predominantly of interwoven *P. sanguinea* leaves and decorated with live moss which covered the exterior of the nest and hung from its base to form a ‘beard’ of c.15 cm. Moss has been reported among materials used by a number of tropical malurines (Rowley & Russell 1997), including some New Guinea species (Ripley 1964, Diamond 1981), and may serve a dual purpose of water-proofing and camouflage. The exterior of the main structure measured c.16 × 12 cm (width × depth), these dimensions being taken at the nest’s widest plane and at the perpendicular. The entrance measured c.6 × 4 cm (width × height), was located centrally in the nest wall and faced away from the slope and towards an edge of the clearing above the sinkhole pool. A slight hood projected above the entrance, a character noted in many other malurid nests, and in this case at least partially attributable to the trampling of its lower edge by regular visits. The nest was positioned at an angle of c.40° to the horizontal, the pattern of trampling at the entrance rim suggesting it may have tilted following recent disturbance.

The nest contained two eggs. One was removed and photographed (Fig. 1B) before we left the area. The egg was of long subelliptical shape, matte white with small pinkish-brown splotsches restricted (or nearly so) to the base of the blunt end. Overall colour and the distribution of markings are similar to other malurine eggs (Schodde 1982, Rowley & Russell 1997). Although more sparsely marked than most other malurine eggs, more examples are needed to determine whether this is the norm.

On returning the following morning to document the clutch in more detail, the nest was empty and the birds could not be located. The cause of failure was not determined, though abandonment seemed probable as the nest remained intact and no shell fragments or feathers were found. Following our visit, the nest area was subject to additional traffic as a walking track was established that led past the sinkhole pool.

The egg pictured is conservatively estimated to measure 20.5–21.8 mm long and 14.0–15.0 mm wide at its broadest point. Dimensions were measured indirectly by calculating
the distance between dermal ridges on the hand photographed (three measures taken). The *Clytomyias* egg is appreciably larger than those known to date from all other malurines, the largest heretofore being the eggs of Superb Fairy-wren *Malurus cyaneus* (at 16–19 mm × 12–14 mm), and within the range of those laid by the larger mynorinines (Rowley & Russell 1997). Egg size increases with body mass in malurids (Rowley & Russell 1997) as in other birds (Rahn et al. 1975). Of those malurines whose eggs have been described, *Clytomyias* is the heaviest (at 10–14 g) and most similar in body mass to *M. cyaneus* (at 9–14 g) (Rowley & Russell 2007). The eggs of Broad-billed Fairy-wren *M. grayi* and Emperor Fairy-wren *M. cyanocephalus*, both from New Guinea, are yet to be described. These are the heaviest of all malurines and their eggs may yet prove proportionately superior.

Most malurids lay 2–4 eggs (Rowley & Russell 2007). In this case the final clutch size could not be determined.

While most malurines are strongly sexually dimorphic, male and female *Clytomyias* are indistinguishable in size and plumage (Rowley & Russell 2007), and it was not possible to determine the sex of the attendant adults. As only two birds were seen, cooperative breeding in this instance was neither confirmed nor denied.

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Page 34 last line Orthotomus cucullatus not Orthotomus cuculatus
Page 81 lines 1–2 'Taxonomy of the Pacific Swift Apus pacificus (Latham, 1802)' complex not 'Taxonomy of the Pacific Swift Apus pacificus Latham, 1802, complex'
Page 92 line 23 'Apus pacificus (Latham, 1802)' not 'Apus pacificus Latham, 1801'
Page 92 line 24 'subspecies kurodae (Domaniewski, 1933)' not subspecies 'kurodae Domaniewski, 1933'
Page 92 line 26 'Apus leuconyx (Blyth, 1845)' not 'Apus leuconyx Blyth, 1845'
Page 92 line 27 'Apus cooki (Harrington, 1913)' not 'Apus cooki Harrington, 1913'
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