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3 Open Access publishing: The Proliferation of Journals of Questionable Quality

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20 All the data obtained in the course of the investigations referred to in this editorial are
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Authors receive increasing numbers of unprompted invitations to submit papers for publication. These invitations have in common flattery and urgency and offer a rapid process towards highly probable publication of whatever is submitted. A sage senior colleague might well advise you to delete such e-mails on sight but for doctors trying to build up their *curriculum vitae* (CV) or résumé, these approaches are seductive.

In preparation for the '3rd World Forum: Principles of Scientific Publications' in May 2024, I collected all the approaches I received by e-mail during a six-month period. Here are extracts from some examples received during the study:

Mathews Journal of Cardiology 3 March 2023. We are aware of your hectic schedule ... please contribute a 2-page editorial or commentary for this issue. In reality, it doesn't take much time to compose a brief essay for a renowned researcher like you.

American journal of Biomedical Science & Research 9 May 2023. We are in need of one article for successful release of Volume 18 Issue 5 ... Hence I humbly request you to submit your manuscript before 16th May ... We hope that submitting a 2-page article isn't time-consuming for an eminent author like you.

AME Surgical Case Reports 23 May 2023. We are requesting for an unpublished paper ... Kindly attach any type of manuscript, we will accept to publish it.

These invitations are likely to be from what are commonly referred to as "predatory journals", a term introduced in 2012 by Jeffrey Beall, an academic librarian. He argued in Nature that "journals that exploit the author-pays model damage scholarly publishing and promote unethical behaviour by scientists"¹ leading to the creation of Beall's List. The word "predatory" is clearly pejorative. There is a wide spectrum of journals using the author-pays model. In our discipline, the Journal of Thoracic and Cardiovascular Surgery, Annals of Thoracic surgery and our own European Journal of Cardio-Thoracic Surgery have created sister journals to be able to accept worthwhile papers that don't make the competitive standard for the main journal so I avoided the word in my talk at the Forum and titled it "On being Pestered by Publishers".

My views on the proliferation and quality of open-access medical journals are informed by two investigations I made in preparation, the presentations I heard at the forum, and further reading since. It is a complex question with no easy answers.

A prospective analysis of approaches from many journals

From 3rd March to 11th September 2023, I responded to all of the e-mails of this type with a standard four-line message.

Thank you for your e-mail.

Tell me a bit more please.

Who are the readers I would reach?

Would there be charges due from me?

If the question of charges was not answered I followed up with a further e-mail. When I closed my study after six months I had saved 320 e-mail exchanges for analysis. The approaches were from 112 separately identifiable journal titles.

The Article Processing Charge (APC) was rarely mentioned at the outset. Of the 112 journals, only two supplied an APC in their original approach to me but 72 gave a price in response to my request. These were usually given in dollars ranging from \$30 to \$3,295 (median \$1,210, interquartile range \$525-2,000). I received no explicit answer from 35 journals.

Some of the publishers engaged in bartering. For example:

Open Science Publications Journal of Surgery 9 May 2023. Joyful greetings from OSP Surgery! Hope you are doing good. I am dropping you this mail as you are one of the shortlisted authors for availing the offer of getting published your article in our journal with less fee. (*sic*)

Journal of Surgery and Research ("fortune journals") 6 September 2023. If

article processing charge is your problem we can provide some more discount on the price. Please let me know how much you can afford to pay?

My first question, about the 'reach' to readers, was occasionally answered in vague terms but never numerically. To obtain my own estimate, in March 2024 I searched the National Library of Medicine (NLM/PubMed) for the year 2023, looking for occurrences of each of the 112 journal titles. No articles were returned for 67 (60%) of the journals and 26 (23%) appeared 12 or fewer times, that is \leq one article per month.

At the other end of the spectrum were journals publishing hundreds or thousands of articles — 6 journals with 235-740 articles, 7 journals with 1,406-17,465. This illustrates the wide range with a few high-volume publishers and a long tail where I cannot be sure whether they are not indexed or are inactive. But what is clear is that if you send your paper to one of these 112, there's ~70% probability that it will not be retrievable on a standard literature search.

A deeper dive into one journal

By March 2024 I had completed the systematic analysis but invitations to publish kept arriving. Unlike my first study, which was a planned investigation, the next was a deeper analysis into a publishing organisation that presented itself for attention, rather like the subject of a case report. And like a good case report, it turned out to be instructive. (Fig.1) This approach invited any form of publication, from any area of research which would be peer reviewed within 72 hours of submission. I looked up the publisher, a step which I would recommend to everyone tempted to submit for publication.

Medical and Research Publications offered 19 titles. (Fig.2) I chose to look at Cardiology which was the second busiest and the nearest fit for my knowledge and experience. It was easily identified from the picture menu. (Fig.3) A click on the heart icon opened a scroll down menu of volumes and issues. (Fig.4) At first sight it was confusing. There were 31 icons, but the sequence of volumes and issues under which they were grouped was haphazard. If you were trying to locate articles in the usual way — by name, date, volume, issue and page — you would be defeated, but as I had embarked on an investigation I persevered. Behind each of these icons was a clutch of 3 ± 2 articles which

could be downloaded as .pdf files. It began to feel like research so I worked out a method.

I downloaded and saved each article, renaming it by adding the first author's name and date. The individual articles provided me with the title, the authors' names, the first author's affiliation, the dates received and published, and the text and illustrations of the paper. My findings were these:

- For the 129 articles for which I had the data, 101 (78%) were misfiled. I checked another title — MAR Pathology & Clinical Research — and found the same sort of chaos.
- For the full 132 articles, the interval from submission to publication was a median of 13 days (range 2-46; IQR 8-19).
- Only 12 had a unique identifying 'DOI' (digital object identifier).
- Only 3 had an e-mail address. Two bounced and the other elicited no response
- The articles originate from 33 different countries. India, with 32 articles, was the largest contributor by a wide margin.
- I made no attempt to systematically review them for quality but plenty showed evidence of a lot of work.
- At the stated APC \$499 per article, for 132 articles the gross charges for MAR Cardiology — not allowing for waivers — would be \$65,868.

In summary, the authors had gained citations to put in their CVs, but the content might not be verifiable by an employer or an accreditation board, or be found by a subsequent researcher.

A case in point

Gianfranco Pacchioni, author of "Scienza, quo vadis?" was a fellow speaker at the forum. I have read his book, translated as "The Overproduction of Truth".² The Italian title is rhetorical but the English title — although ironic — captures his concerns. In his chapter "Publish or Perish" he deals with failure to cite prior publications. This might be seen as forgivable on the one hand, given the plethora of published work, or avoidable given the power of searches. Coincidentally, an example came to my attention.

151
152 Soon after the forum, I received a citation alert from Springer Nature Publishing
153 Company. In a paper titled “Lung Metastasectomy: Where Do We Stand?” the authors
154 reported uncontrolled observational data on lung metastasectomy.³ They cited our
155 report of a randomised controlled trial (PulMiCC)⁴ only to disregard it. It had been
156 published in 2019 but in the ensuing five years we published reports of the full study
157 (2020, 2021)^{5, 6}, two EJCTS papers (2021, 2022),^{7, 8} including the reception of the trial
158 by other authors, and it was the subject of an Analysis piece in the BMJ (2023)⁹. None of
159 these were cited. Referring to relevant prior literature is a requirement for rigorous
160 scientific publishing² and all the more so if it disagrees with you. For the paper to be
161 published with this omission also raises a question about the quality of the reviewing
162 process.

164 **High volume open access publishing**

165 “Lung Metastasectomy: Where Do We Stand?” is in the Journal of Clinical Medicine
166 (JCM)³ published by MDPI (Multidisciplinary Digital Publishing Institute). My chance
167 finding of MAR Cardiology had taken me to what appeared to be the lightweight end of
168 the spectrum of open access publishing, whereas MDPI is a heavyweight. The initials
169 MDPI, which originally stood for Molecular Diversity Preservation International, was
170 founded in 1996 as a non-profit institute. In 1997 MDPI took over the publication of the
171 journal Molecules from Springer Verlag and, with this and other titles, entered the
172 growing business of publishing open access journals. On 8th July 2024, the MDPI website
173 listed 450 titles alphabetically, from Acoustics to Zoonotic Diseases, across a broad
174 sweep of sciences. The website lists 88 titles on PubMed but in my exploration I found
175 many more titles that appeared unequivocally medical and many of them indexed on
176 PubMed listings. Would-be authors—if they are seriously interested in whether their
177 work will be searchable and citable—should give the matter some thought and make
178 their own assessment.

179 For 429 MDPI titles the APC is given in Swiss Francs, ranging from CHF 500-2,900 (IQR
180 1,000-1,800) with a median euro equivalent of €1,240 at today’s exchange rate. JCM’s
181 APC is above the average cost at CHF2,600. “Lung Metastasectomy: Where Do We

Stand?”³ has 13 authors, which would have made it individually more affordable for them or their institutions.

MDPI sponsored and were strongly represented at the forum. A senior editor, Enric Sayas, spoke on “Artificial Intelligence in the Scientific Publishing Industry – New Challenges” and Stefan Tochev, MDPI Chief Executive Officer, presented their 2023 Performance Report. They are fully committed to the virtues of open science as set out in the Budapest Open Access Initiative¹⁰ and the Berlin Declaration on Open Access¹¹ and to advancing open access journal publication. They contributed to the discussion at the Forum knowledgeably. They were doing their job as publishers but I was left wondering about oversight and quality across their large number of publications.

According to Wikipedia “MDPI's business model is based on establishing entirely open access broad-discipline journals, with fast processing times from submission to publication and article processing charges paid by the author, their institutions or funders”. The goal of a short processing time makes the reviewing process vulnerable to error. Also, a “broad-discipline journal” might not have had access to the necessary expertise to spot the omission of some directly relevant literature. Wikipedia also notes that “MDPI was included on Jeffrey Beall's list of predatory open access publishing companies in 2014 but was removed in 2015 following a successful appeal while applying pressure on Beall's employer.”

The proliferation of medical journals

About 30,000 journals are in the NLM/PubMed list. Medicine is the worst offender in the proliferation of journals and my generation should take its share of the blame. Surgeons are primarily practitioners and should keep up to date by reading and attending meetings. Writing papers is not essential for high quality practice, but it became required in the time of a growing “publish or perish” culture. For example, the orthopaedic training board at the English Royal College of Surgeons around 1980/90s gave guidance that to be certified, all candidates should have published at least three first author papers. That sort of pressure led to an increasing number of journals but at the risk of lowering their quality. Existing subscription journals opened subsidiary journals and, in a growing electronic publishing environment, they were made open access, paving the way to an author-pays marketplace.

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215 **Questionable quality**

216 More submissions required more reviewers. Responsible reviewing requires expertise
217 and diligence and, inescapably, takes time. Traditionally reviewers were unpaid — our
218 time was given in the interest of scientific quality control. But I discovered in my
219 investigations that publishers offer reviewers waivers on APCs, providing indirect
220 remuneration — a move away from the principle of unpaid reviewing —insidiously
221 oiling the wheels of proliferation and probably lowering standards.

222

223 In March 2023 Eva Amsen in a BMJ article — “How to avoid being duped by predatory
224 journals BMJ”¹² — collected snippets from the great and the good. In that title —
225 including the words “duped” and “predatory”— she doesn’t mince her words. It is tragic
226 that the great vision of open science and open access, if not completely corrupted¹, has
227 become tainted by a publishing marketplace. Going through the 132 papers in my
228 second investigation I could picture the authors, often writing well, illustrating
229 beautifully, and filled with enthusiasm to get published. Their work was largely
230 irretrievable because they were badly let down by MAR Publications’ ramshackle
231 indexing. I fear there are plenty of other publishers with their own set of shortcomings.
232 We may not be able to change the world to halt proliferation and maintain quality, but
233 medical authors need to be aware of these problems. In my opening I suggested that
234 sage seniors might advise you to delete unread all invitations to submit, but that risks
235 missing important invitations — for example from an editor to write an editorial or
236 commentary — so it is a bit more complicated than that.

237 For junior or inexperienced authors, and for experienced authors who have not seen
238 this journal title before, look it up on internet. Is it listed in PubMed? Look at
239 composition of the editorial board. Get the advice of a colleague with experience of
240 publishing. If the journal is truly “open access” you will be able to see what they produce
241 and whether it is a good fit for your work,

242

243 Legends to figure

244

245 Figure 1. Invitation letter from Medical and Research Publications

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247 Figure 2. MAR Publications titles and the numbers of Editorial Board members. They are
248 ordered by the number of articles published in the first quarter of 2024.

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250 Figure 3. The journal choice screen of MAR Publications.

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252 Figure 4. The contents of MAR Cardiology. Note that under the heading 2021 Volume 1
253 the issues are in haphazard order and are all labelled September.

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Medical and Research (MAR) Publications

Mar Pathology welcomes papers from all areas of research and are open to submissions from any discipline. This month we are intending to release a special issue. In this issue, we accept abstracts, which will be presented in the form of posters / oral / videos. Also, will provide you with the best article certificate.

Your submission will be reviewed by our editors also provide you with the review report with the double-blinded peer review process within 72 hours of article submission. and, if accepted, it will be published in our journal. This is an excellent opportunity to get your work seen by an audience of professionals who are already well-versed in the topic.

Kindly submit your paper to this mail before the deadline so we can review it in time.

Regards

Ms. Flora Grace

Managing Editor

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