

**ON THE OCCURRENCE OF BULLATIONS IN THE
SEAGRASS, *HALOPHILA OVALIS* (R. BROWN) HOOKER F.
FROM BAIS BAY, CENTRAL PHILIPPINES**

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Introduction

In a survey of seagrasses in Bais Bay, Negros Oriental in Central Visayas, Philippines in April 1984 and June 1985, the authors collected an "unusual" looking seagrass in the intertidal area. Material collected in both years were sterile. When examined closely, more than half of the larger leaves were found to have "bullations". These bullations are due to the presence of bulliform cells described by Esau (1965) as "enlarged epidermal cells with their anticlinal walls ... participating in involution and folding movements". In grass leaves, these bulliform cells enable the leaves to fold or roll during excessive loss of water (Esau, 1965), as in intertidal areas.

Bullate cells in seagrasses were first seen by Setchell in 1924 in a collection of *Halophila ovalis* from the American Samoa. He described these specimens as *H. ovalis* var. *bullosa*. Den Hartog (1970) considered this taxon as sufficiently distinct and raised it to subspecies. It is interesting to note that den Hartog also found bullate cells in some *H. stipulacea* (Forsk.) Aschers. from the Red Sea. Calvin McMillan (1982) however, using isozyme and culture studies, found no taxonomic basis for separating *Halophila ovalis* based on bullation. Considering the widespread distribution of these cells in terrestrial - and sea grasses and recognizing its role during water loss - the authors concur with McMillan. Bullate leaves of *H. ovalis* have been encountered in samples from Samoa, Tonga and the Fiji Islands and now from the Philippines.

Description (Figures 1,2)

Plants with long and narrow rhizomes, not more than 1 mm in diameter; internodes 5-30 mm long; usually one root present below each erect shoot. Erect shoot consists of a pair of leaves borne on each node. Leaves petiolated, petioles 7-20 mm long, each enveloped by a pair of transparent scales. Apex of scales emarginate, the base slightly auriculate. Leaf blades linear-lanceolate, occasionally oblong or elliptic, width 2-4.5 mm, length 8-14 mm, apices obtuse, bases attenuate, margins

entire; generally with 8-9 pairs of alternate or sometimes opposite cross-veins, diverging at 45-degree angle from the midrib; cross-veins occasionally forked. Upper and lower surfaces of the blade glabrous; margin of blade entire; often leaves bullate and two sides of the leaf blade unequal. The Philippine specimens are slightly larger than the ones described by den Hartog (1970) from the South Pacific. Also, one can encounter both smooth and bullate leaves in the same plant.

Natural History

Samples were collected from the exposed southern opening of North Bais Bay on the northern tip of Daco Island (9°35'49" N latitude, 123°09'03" E longitude) in Negros Oriental, Central Visayas, Philippines. The collecting site is intertidal; the substrate is mud and fine sand. During low tide, the extensive intertidal area becomes exposed. The water is generally turbid (<3m transparency) as three rivers drain into the area. Organic pollution is high as residents along the shore dump untreated sewage into the sea. This is exacerbated by the presence of a sugar mill, poultry farms and piggery in the area. Salinity ranges from 28 ppt to 36 ppt and water temperature from 24°C to 40°C. The plants occur in a mixed seagrass bed dominated by *Enhalus acoroides* (L.f.) Royle, and with *Cymodocea rotundata* Ehrenberg and Hemprich ex Ascherson, *Halodule pinifolia* (Miki) den Hartog and *Halophila ovalis* (R. Brown) Hooker f. Mature leaves of plants are found heavily epiphytized by the cyanophycean, *Lyngbya majuscula* (Dillwyn) Harvey and the red alga, *Goniotrichum alsidii* (Zanardini) Howe. Pennate diatoms also inhabit blade surfaces.

Specimens Studied: 84-EM: From the northern tip of Daco Island in North Bais Bay, Negros Oriental Philippines; intertidal; muddy bottom with fine sand; collected by L. Alcala, D. Catada and S. Alcazar in April 1984. 85-EM: Same collecting site and collectors as above; collected on June 23, 1985.

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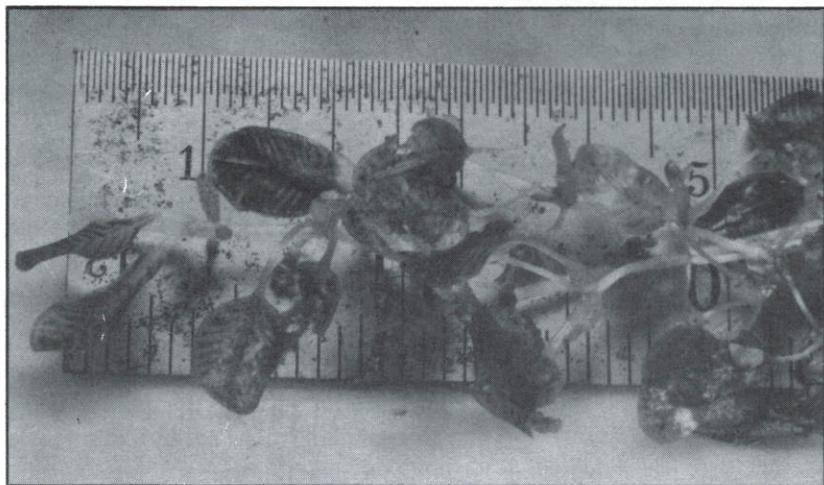
Figure Legends

Figure 1. *Halophila ovalis*, habit.

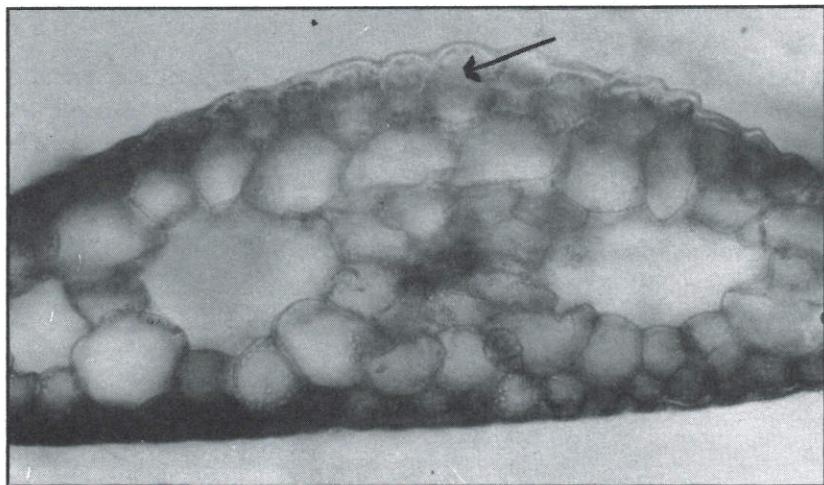


Figure 2. Cross-section of a leaf, showing slightly bullate cells (arrow).

WHY JANE AUSTEN

Dale Law

In my twenty years at Silliman University, the attempt to transmit a personal enthusiasm for novels and poems written a hundred and more years ago has not infrequently met stiff resistance from my students. Very often this resistance has been articulated in one word: "irrelevant"! My effort in this paper, at least in part, is to show that "relevance" is often taken too seriously, too narrowly, and that one may find relevance where one little expects it - even in a life-long interest of mine, the early nineteenth-century British novelist Jane Austen, who probably never heard of the Philippines.

Rudyard Kipling, another nineteenth-century Briton, is a household name no longer. He is furthermore today somewhat infamous as the poet of British imperialism and colonialism. But he provides a place to start this discussion. In a book of Kipling's short stories, *Debits and Credits*, appears "The Janeites," a once quite famous story about old soldiers discussing old battles. The subject of "one Jane" comes up. An ignorant soldier had heard her name mentioned by the officers in the midst of battle. Because of the bond it seemed to build among the initiated, he had thought "Jane" a code word, perhaps of some secret society. At any rate, devotion of "Jane" seemed to give her admirers strength in difficult times. In conversation with another old soldier, the discovery comes:

"Oh Jane was real, then? Anthony glanced for an instant at me as he put the question. "I couldn't quite make that out."

"Real!" Humberstall's voice rose almost to a treble. "Jane? Why, she was a little old maid 'oo'd written 'alf a dozen books about a hundred years ago. "Twasn't as if there was anythin' to 'em either. I know. I had to read 'em. They weren't adventurous, nor smutty, nor what you'd call even interestin' — all about girls o' seventeen (they begun young then, I tell you), not certain 'oom they'd like to marry; an' their dances an' card-parties an' picnics, and their blokes goin' off to London on 'orseback for 'air-cuts an' shaves. It took a full day in those days, if you went to a proper barber. They wore wigs, too, when they was

chemists or clergymen. All that interested me on account o' me profession, an' cuttin' the men's 'air every fortnight. Macklin used to chip me about bein' an 'airdresser. 'E could pass remarks, too!" (Kipling: 132).

Jane was real! Of course, Kipling is working on two levels here — and "Jane's" reality transcends the commonplace, disparaging assessment of the second soldier. Jane's reality is like that of "Shakespeare our contemporary" - Kipling is saying, her works are truly for all times and all places:

"Jane wasn't so very 'ard — not the way Macklin used to put 'er," Humberstall resumed. "I 'ad only six books to remember. I learned the names by 'eart as Macklin placed 'em. There was one, called Persuasion, first; an' the rest in a bunch, except another about some Abbey or other — last by three lengths. But, as I was sayin', what beat me was there was nothin' to 'em or in 'em. Nothin' at all, believe me."

"You seem good and full of 'em any'ow," said Anthony.

"I mean that 'er characters was no use! They was only just like people you run across any day. One of 'em was a curate—the Reverend Collins— always on the make an' lookin' to marry money. Well, when I was a Boy Scout, 'im or 'is twin brother was our troop-leader. An' there was an upstandin' 'ard-mouthed Duchess or a Baronet's wife that didn't give a curse for any one 'oo wouldn't do what she told 'em to; the Lady--Lady Catherine (I'll get in a minute) De Bugg. Before Ma bought the 'airdressin' business in London I used to know of an 'olesale grocer's wife near Leicester (I'm Leicestershire myself) that might 'ave been 'er duplicate. And—oh yes—there was Miss Bates; just an old maid runnin' about like a hen with 'er 'ead cut off, an' her tongue loose at both ends. I've got an aunt like 'er. Good as gold—but, you know" (Kipling: 133-34).

The non-academic Jane Austen of Kipling's British officers continues to thrive. There are still plenty of Janeites, ordinary folks who read Austen's novels, who join the International Jane Austen Society and contribute their thoughts to its monthly journal. Thousands of these non-professionals make pilgrimages to Steventon and

Chawton and Bath and Lyme and Winchester, sites of her life and works and death, bringing home postcards, souvenir books, and Jane Austen dolls. Of course the danger of trivializing her works exists, but Austen described her own art in very modest terms: "The little bit (two inches wide) of ivory on which I work with so fine a brush as produces little effect after much labour" (Letters: 469). "Three or 4 families in a country village is the very thing for me to work on" (Letters: 401).

The novels also continue to be taken very seriously by academics. A veritable Jane Austen industry yearly spawns dissertations, books and seminars by the hundreds. Austen today stands as a towering figure of early nineteenth century English literature - even of world literature.

Such fame is surprising in some ways. She saw nothing of it in her lifetime; her novels were published anonymously until after her death. Daughter of a country pastor, she lived almost completely out of high society. And she never married. The obscurity in which she lived makes substantial biography almost impossible. There are no multi-volume studies of her life of the sort that honor other nineteenth-century British novelists. We do not even have a clear idea of what she looked like. Two very amateur watercolors by her sister Cassandra exist; one, a back view, hangs in the National Portrait Gallery in London.

Although she had almost no literary acquaintances with whom she might share deep thoughts about her art, her surviving letters to family and friends cover a wide range and are of great interest. These letters and anecdotes passed down through the family, have always been the main sources for information on her life. Very recently though, investigators have tried to get beyond the letters. Of particular interest is Park Honan's effort in Jane Austen: Her Life (1987). Honan makes an ingenious attempt to flesh out Austen's life using unorthodox, tangential sources and family information that had never before become available. For instance, brief mention has long been made of Austen's sailor brothers. Both became admirals in the Royal Navy. One reached the highest rank possible and never retired, serving in active duty until his peaceful death well into his eighties. And then there was the cousin who married a French nobleman - a man who lost his head in the Reign of Terror during the Revolution. Honan explores these relations in deeper fashion than any earlier biographer and is able to convincingly forge a connection between larger world events and Austen's life and writings. In doing so, he underscores the fact of her concern with issues of society beyond the local and personal.

Austen's early death in 1817 at age 41, cut short a career that was really just beginning. She had completed only the six novels mentioned by Kipling's old soldier. But from these books a comprehensive picture of life in late eighteenth century English emerges. I earlier (Law, 1977) made efforts to use Austen's novels and a number of books that she read or may have read in an attempt to glimpse that world through her eyes. As Kipling shows so well, Austen writes not just stories, she depicts a people, a culture. Of course, as she paints her world, she also reveals herself. Her books lead us to raise many underlying sociological questions as we note coincidences and discrepancies between our world and hers. So often her characters, especially her women, act in ways that seem just short of irrational to us today. As we question such behavior, we cannot escape exploring the role of woman in her time.

The fact of gender is inescapable. Honan is particularly good at showing this human side of Austen. Although reports say she was not really beautiful, many seemed to have admired her eyes — she was quite a popular young lady. She loved to dance. No slave to her literary art, she had several brushes with romance, even accepting at least one marriage proposal. This offer from a much younger man she thought better of the next morning and withdrew from, with much embarrassment on both sides. Through their many ups and downs, Austen's novelistic heroines have better luck in love. As her life and work are set side by side, it is difficult to keep from concluding that the success of her heroines may in some way substitute for her own less-fulfilling life experiences.

Although the mating process is always at the center of her art, Austen approaches it from a variety of directions and with a wide range of heroines. All, though, share a common frustration - whether they are conscious of it or not. As very early nineteenth-century women they can only fully be themselves in marriage. An unattached woman faces restrictions hard to imagine in our liberated age. Austen's most famous example is found in Pride and Prejudice: Elizabeth Bennet is perfection itself. She is intelligent, beautiful, positively charming; yet she is nearly condemned to withered old-maidhood. Why? Her intelligence works against her marriage prospects. She sets her standards so high that she either frightens the men away or herself rejects them as inferior to her ideal. It takes a near miracle to bring her happiness.

Emma Woodhouse in Emma, is somewhat less attractive to readers than Elizabeth, although she shares Elizabeth's charms. But Emma is rich; wealth makes her too sure of herself and what she can do. Feminine self-confidence in a world

dominated by men brings on the mistakes that Emma makes for herself and for others. In this novel, luck and an older admirer with infinite patience bring Emma to happiness. A similar theme of mistakes - but those growing out of Catherine Morland's ignorance and inexperience - is found in Northanger Abbey. Again, happiness comes because a man can put up with the heroine's winning foolishness.

Fanny Price in Mansfield Park, is close to an archetype of female weakness. This relatively unappealing heroine dimly flickers through her novel, hovering at the edge of the stage, waiting for her cousin Edmund to notice and appreciate the purity of her true heart. Once more, women either strong or weak, are helpless. They cannot act meaningfully on their own behalf but must await lucky circumstances or the actions of men to bring them to fulfillment.

The most wrenching example of the female dilemma is perhaps found in Persuasion, published after Austen's death. Anne Elliott has been persuaded by Lady Russell, the bosom friend of her late mother, to say "no" to the man she loves. The arguments are that she does not know her own young mind and that she will receive more eligible offers of marriage in the future. Lady Russell is wrong on both counts, as Anne's happiness has clearly been blighted. The mistake seems to us simple to correct, but Anne's position as woman prevents her from reversing her decision. Years of regret take her long past a "marriageable" age. Almost miraculously, events conspire to give her a second chance at happiness, but the recurrent theme of women disadvantaged and of women thwarting women, is not negated.

The prime example in Austen's work of female helplessness - perhaps oppression, it seems to me - is found in Sense and Sensibility, an early novel that is not generally regarded as among her best. Here we see two sisters, young, attractive, but not wealthy, placed in a vulnerable position by the sudden death of their father, whose fortune goes to his eldest son. Both Marianne and Elinor Dashwood fall in love, but neither receive the automatic benefits such a state would bring. Although the novel might be looked at in many different ways as the title indicates, the two girls can be seen as representative of types. Elinor, the elder sister, is more formal, less spontaneous, more careful. She scrupulously follows the principles of eighteenth-century courtship which caution a woman to be very sure that he loves her before she displays her affection for a man in any way. In a society which so much values appearances, a woman must guard against having her possible disappointments exposed. Even worse, the weak position of woman - particularly of a woman who lacks powerful male protectors - leaves her without recourse should she find herself not just broken-hearted, but also pregnant and abandoned. The latter

predicament is actually presented in Sense and Sensibility, although it occurs off-stage and to a peripheral character, not to one of our heroines.

At any rate, and at her own peril, Marianne — embodied “sensibility” — ignores all rules. She follows only her own heart in wild, unchaperoned pursuit of her beloved Willoughby, a man who proves unworthy of her. We readers sympathize with their frantic love affair; after all, we are Romantics, too. But the couple is in gross violation of eighteenth-century decorums. Sister Elinor tries “sensibly” to restrain Marianne, while also attempting to suppress her own feelings in what seems an equally hopeless romance.

I have written elsewhere (Law, 1977) about the education of women during the period and the effect it had upon their modes of behavior. Then, as now, girls learned not just from parents and from experience, but from books. Guides to polite behavior were readily available in published form. However widely such “courtesy books” may perhaps have been ignored, it is known that Austen indeed read many of them, had several in her private library, and commented on them in her letters. In general, writers of such books base their strictures loosely on the principles of Locke and Rousseau, with great attention to the “nurture” and protection of young women, giving strict guidelines for behavior that should become habit.

Many of the principles set forth specifically pertain to relations between the sexes. By twentieth-century Romantic standards, these ideas seem ludicrous. For instance, a woman must not express her positive feelings for a man until a proposal of marriage has actually been made. No — repeat, no — “encouragement” is to be given him. She should retain an air of inaccessibility. Ideally, she must not allow herself to “love” even in her imagination, until that marriage proposal has been received. Of course, this ideal lay somewhat far from the reality, with illegitimate births not unheard of in literature or in life.

But the ideal was proclaimed. Daughters, as “weaker vessels” must be protected, with many restrictions put upon their development and activities to keep them within the mold. James Fordyce, whose extremely popular Sermons to Young Women (1766; 11th ed., 1792) dwells extensively on the “weaker vessels” (I Peter 3:7) construct, holds that the goal of a female’s education must be behavior in accord with “the principle of elegant simplicity.” The aim is to produce a woman at least somewhat decorative, neither dangerous nor entirely useless.

Fordyce more than once includes cautions in the following vein: “Need I tell you, that men of the best sense have been usually adverse to the thought of marry-

ing a witty female?" (Fordyce, I: 192). Thus, education should make a woman "refined" rather than "profound," her hallmark, "unaffected bashfulness." Fordyce ends his book with two sermons "On Female Meekness."

Perhaps even more difficult for moderns to take seriously is the advice of John Gregory, a medical doctor, in his Father's Legacy to his Daughters (1774: 32):

Though good health be one of the greatest blessings of life, never make a boast of it; but enjoy it in grateful silence. We so naturally associate the idea of female softness and delicacy with a corresponding delicacy of constitution, that, when a woman speaks of her great strength, her extraordinary appetite, her ability to bear excessive fatigue, we recoil at the description, in a way she is little aware of.

A reading of such books of advice, the same books that Austen herself read, soon makes it clear to us, as it was clear to Austen, that women had not fallen naturally into the weak position in which they found themselves at the end of the eighteenth century. They had been placed there by men, who, from their positions of power, continued to manipulate female education to keep women powerless.

It is not entirely certain that Jane Austen had access to the pioneering feminist work of Mary Wollstonecraft, A Vindication of the Rights of Woman (1792), but there is in Austen's novels an identical, if less strident thrust:

I may be accused of arrogance; still I must declare what I firmly believe, that all writers who have written on the subject of female education and manners, from Rousseau to Dr. Gregory, have contributed to render women more artificial, weak characters, than they would otherwise have been; and, consequently, more useless members of society (Wollstonecraft: 53).

Wollstonecraft - who died giving birth to daughter Mary, a woman who would in her own right become famous as wife of Romantic poet Percy Shelley and author of Frankenstein - attacks the foundations of education for women laid down by those male manipulators whom Austen read and deplored:

Novels, music, poetry, and gallantry, all tend to make women the creatures of sensation, and their character is thus formed in

the mould of folly during the time they are acquiring accomplishments, the only improvement they are excited, by their station in society, to acquire. This over-stretched sensibility naturally relaxes the other powers of the mind, and prevents intellect from attaining that sovereignty which it ought to attain to render a rational creature useful to others, and content with its own station (Wollstonecraft: 105).

Austen's Sense and Sensibility fleshes out Wollstonecraft's abstractions, as the two Dashwood sisters suffer parallel disappointments, fruit of the sort of education Wollstonecraft decries. Elinor's Edward, dazzled by seeming "accomplishments", had earlier thoughtlessly asked the greatly inferior Lucy to marry him. Edward feels honor-bound to that secret engagement even when he sees Elinor, and his eyes are opened to Lucy's crudeness.

Elinor may be more ready than her sister Marianne for bad news, but her adherence to the female role keeps her so reticent that she can provide little comfort to Marianne when the younger sister's heart is likewise broken. The dashing Willoughby literally sweeps Marianne off her feet. And the public nature of their courtship scandalizes - while it also entertains - the community. Marianne, unprotected and unadvised, is blind to adverse possibilities. It is clear to the readers that although Willoughby badly wants Marianne, he needs money more. Of course when he discards Marianne for a wealthier, if less attractive woman, Marianne is devastated. The ensuing novelistic illness takes her near death. Like her sister, Marianne has not been provided with the intellectual or material resources that might help her to determine her own fate.

Perhaps the worst aspect of this feminine predicament, again clearly shown by Austen, is that women have apparently been trained to oppress other women. In Sense and Sensibility, the girls' widowed mother is of no help at all. Mindlessly conditioned to take her lead from men, she senses nothing amiss either in the obvious double-dealing of Willoughby or in the more subtle moodiness and delayed proposal of Edward. No attempt at intervention is made until it is too late. Elinor and Marianne are afflicted also by Mrs. Jennings' persistent teasing and the heartless stupidity of Lucy's sister. No relief is available for the suffering pair; as women they must wait. There is simply nothing else to be done.

Once more the happy ending comes. This time good luck is combined with Lucy's fickleness and the steadiness of the slightly older Colonel Brandon, who has

always admired Marianne from a distance. But the same ingredients could so easily have brought on tragedy. Pregnancy out of wedlock, and the resulting burden of shame in that society, so often led to further moral degeneration, illness, even death - perhaps through suicide. And the spinsterhood of a Jane Austen is no very attractive alternative.

It should be abundantly clear to her readers that Austen understood the position of woman in her time - and that she objected to it. Within the restrictions put upon her, she expressed herself as best she could. Life was difficult enough for the "ordinary" women of her novels, but there was simply no place for one of Austen's genius and gender in the society in which she found herself, even in her own home. Admired as she was by some of her brothers and sisters, others in the family considered her a sort of freak, reacting with fear when simple Aunt Jane was uncovered as a published novelist, apparently anxious about who might have been the original of an unattractive man or woman delineated in her last book.

Perhaps Austen preferred being treated as nothing special, but her art cannot have been enhanced by the advantages withheld from her. Made famous by twentieth century novelist Virginia Woolf was the arrangement of three chairs on which Austen, seriously ill, did her final work while her hypochondriacal mother occupied the only sofa in their small house. Would a male writer have been treated so? Her early death in obscurity cannot be separated from the fact that Jane Austen was a woman.

Austen was of course, but one of so many who suffered. Even the relatively enlightened late twentieth century is replete with such abuses based on gender. But Austen's case seems a particular waste. The novels and the life they express show such genius, such power for love. Though disadvantaged, Austen refused to compromise. She would not conform by accepting the safety of a marriage less ideal than those granted her heroines. Nor would she compromise her art by agreeing to write what was expected of her. In a famous exchange of letters with the chaplain to the Prince Regent of England, she politely rejects every condescending, patriarchal suggestion that that powerful man has to make for "her next novel."

But neither was Austen a propagandist. She is never strident but always subtle in her art. Despite the wrenching disappointments in her personal life and in those of her female contemporaries transmuted into the pain her heroines endure, Austen consistently holds to idealized endings. The message is clear: woman will eventually prevail, and on her own terms.

Jane Austen was certainly no Filipina; and she walked the earth almost two hundred years ago. But how can her art, even from the point of view of our very different Philippine society, be seen as other than important to our lives today? To me it is clear that Austen's life and work — and her death — are analogous to the twentieth-century struggles of women in every country on earth — West, East, Third World, Russia, the Philippines; Muslim countries, Christian countries, Hindu countries. Millions of women, sisters of Jane Austen, are finally rising up to break the bonds that so tightly bound the author and her heroines long ago. They are now fighting the battle that Austen could fight only through her anonymous novels, a battle that she really did not know how to fight. Today, at last, they seem to be winning.

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